ENCLOSURE 1

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

JANUARY 1 – DECEMBER 31, 2024

54 Pages Follow

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Monticello Nuclear Generating Plant

Annual Radioactive Effluent Release Report

2024

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1.0 LIST OF ACRONYMS AND DEFINITIONS

1. Alpha Particle (α): A charged particle emitted from the nucleus of an atom having a mass and charge equal in magnitude of a helium nucleus.

2. BWR: Boiling Water Reactor

3. Composite Sample: A series of single collected portions (aliquots) analyzed as one sample. The aliquots making up the sample are collected at time intervals that are very short compared to the composite period.

4. Control: A sampling station in a location not likely to be affected by plant effluents due to its distance and/or direction from the Plant.

5. Counting Error: An estimate of the two-sigma uncertainty associated with the sample results based on total counts accumulated.

6. Curie (Ci): A measure of radioactivity; equal to 3.7×10^{10} disintegrations per second, or 2.22×10^{12} disintegrations per minute.

7. Direct Radiation Monitoring: The measurement of radiation dose at various distances from the plant is assessed using thermoluminescent dosimeters (TLDs), optically stimulated luminescent dosimeters (OSLDs), and/or pressurized ionization chambers.

8. Grab Sample: A single discrete sample drawn at one point in time.

9. Indicator: A sampling location that is potentially affected by plant effluents due to its proximity and/or direction from the plant.

10. Ingestion Pathway: The ingestion pathway includes milk, fish, drinking water and garden produce. Also sampled (under special circumstances) are other media such as vegetation or animal products when additional information about particular radionuclides is needed.

11. ISFSI: Independent Spent Fuel Storage Installation

12. LLD: Lower Limit of Detection. An *a priori* measure of the detection capability of a radiochemistry measurement based on instrument setup, calibration, background, decay time, and sample volume. An LLD is expressed as an activity concentration. The MDA is used for reporting results. LLD are specified by a regulator, such as the NRC and are typically listed in the ODCM.

13. MDA: Minimum Detectable Activity. For radiochemistry instruments, the MDA is the *a posteriori* minimum concentration that a counting system detects. The smallest concentration or activity of radioactive material in a sample that will yield a net count above instrument background and that is detected with 95% probability, with only 5% probability of falsely concluding that a blank observation represents a true signal.

14. MDC: Minimum Detectable Concentration. Synonymous with MDA for the purposes of radiological monitoring.

15. Mean: The sum of all of the values in a distribution divided by the number of values in the distribution, synonymous with average.

16. Microcurie (µCi): 3.7×10^4 disintegrations per second, or 2.22×10^6 disintegrations per minute.

17. millirem (mrem): 1/1000 rem; a unit of radiation dose equivalent in tissue.

18. Milliroentgen (mR): 1/1000 Roentgen; a unit of exposure to X- or gamma radiation.

19. N/A: Not Applicable

20. NEI: Nuclear Energy Institute

21. NRC: Nuclear Regulatory Commission

22. ODCM: Offsite Dose Calculation Manual

23. OSLD: Optically Stimulated Luminescence Dosimeter

24. Protected Area: A 10 CFR 73 security term is an area encompassed by physical barriers and to which access is controlled for security purposes. The fenced area immediately surrounding the plant and around ISFSI are commonly classified by the licensee as “Protected areas.” Access to the protected area requires a security badge or escort.

25. PWR: Pressurized Water Reactor

26. REC: Radiological Effluent Control

27. REMP: Radiological Environmental Monitoring Program

28. Restricted Area: A 10 CFRR 20 defined term where access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

29. TEDE: Total Effective Dose Equivalent, means the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

30. TLD: Thermoluminescent Dosimeter

31. TRM: Technical Requirements Manual

32. TS: Technical Specification, also referred to as Tech Spec

33. Unrestricted Area: An area, access to which is neither limited nor controlled by the licensee.

34. WSP: Water Storage Pond

2.0 EXECUTIVE SUMMARY

Monticello Nuclear Generating Plant (MNGP) Radiological Effluent Control (REC) Program was established to limit the quantities of radioactive material that may be released based on calculated radiation doses or dose rates. Dose to Members of the Public due to radioactive materials released from the plant is limited by Technical Specifications,10 CFR 20, and by 40 CFR 190. Operational doses to the public during 2024 were calculated to be within the limits required by regulation and compared to other sources of radiation dose and pose no health hazard. These doses are summarized and compared to the regulatory limits in Section 2.1 Comparison to Regulatory Limits below.

The Annual Radioactive Effluent Release Report (ARERR) is published per REC requirements and provides data related to plant operation, including: quantities of radioactive materials released in liquid and gaseous effluents; radiation doses to members of the public; solid radioactive waste shipped offsite for processing or direct disposal; and other information as required by site licensing documents.

In 2024, the gaseous effluent dose assessments for locations from the Land Use Census showed that the critical receptor for Monticello Nuclear Generating Plant is Child, due to Ground Plane, Inhalation, and Vegetable, at a garden 1.11 miles SE. The maximum Annual Organ Dose calculated for this receptor 3.39E-02 mrem, to the Bone. The calculated dose to the thyroid was 3.08E-02 mrem.

The maximum dose calculated to any organ due to radioactive liquid effluents was 4.61E-02 mrem for Child Whole Body or Any Organ at the nearest drinking water uptake, the St. Paul Water Intake, 34.2 mi downstream of the plant.

Solid radioactive waste shipped offsite for processing or direct disposal included 39.8 Curies and 371.3 m^3, shipped in 14 shipments.

In addition to monitoring radioactive effluents, MNGP has a Radiological Environmental Monitoring Program (REMP) that monitors for levels of radiation and radioactive materials in the local environment. Data from the REMP is published in the Annual Radiological Environmental Operating Report (AREOR).

2.1 Comparison to Regulatory Limits

During 2024 all solid, liquid, and gaseous radioactive effluents from Monticello Nuclear Generating Plant were well below regulatory limits, as summarized in Table 1 and Table 2.

Table 1, Monticello Nuclear Generating Plant Dose Summary[1]

		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Liquid Effluent Dose Limit, Total Body	Limit	1.5 mrem	1.5 mrem	1.5 mrem	1.5 mrem	3 mrem
	Total Body Dose	1.38E-02	8.74E-03	7.64E-03	1.59E-02	4.61E-02
	% of Limit	0.92	0.58	0.51	1.06	1.54
Liquid Effluent Dose Limit, Any Organ	Limit	5 mrem	5 mrem	5 mrem	5 mrem	10 mrem
	Max Organ Dose	1.38E-02	8.74E-03	7.64E-03	1.59E-02	4.61E-02
	% of Limit	0.28	0.17	0.15	0.32	0.46
Gaseous Effluent Dose Limit, Gamma Air (Noble Gas)	Limit	5 mrad	5 mrad	5 mrad	5 mrad	10 mrad
	Gamma Air Dose	7.6E-04	1.28E-03	6.43E-04	6.83E-04	3.37E-03
	% of Limit	0.02	0.03	0.01	0.01	0.03
Gaseous Effluent Dose Limit, Beta Air (Noble Gas)	Limit	10 mrad	10 mrad	10 mrad	10 mrad	20 mrad
	Beta Air Dose	2.06E-04	3.86E-04	3.09E-04	2.17E-04	1.12E-03
	% of Limit	0.002	0.003	0.003	0.002	0.01
Gaseous Effluent Organ Dose Limit (Iodine, Tritium, Particulates with > 8-day half-life)	Limit	7.5 mrem	7.5 mrem	7.5 mrem	7.5 mrem	15 mrem
	Max Organ Dose	4.76E-03	1.29E-02	1.84E-02	4.79E-03	3.23E-02
	% of Limit	0.06	0.17	0.25	0.06	0.22

[1] Table 1 demonstrates compliance with 10 CFR Part 50, App. I Limits.

Table 2, Total Annual Offsite-Dose Comparison to 40 CFR 190 Limits for MNGP

Dose Type	Organ	Dose	40 CFR 190 Limits	% of Limit
Direct Radiation Dose*	All	Not detected	-	0.00%
Noble Gases	Whole Body Skin	1.59E-03 mrem 3.11E-03 mrem	- -	0.01% 0.01%
Particulates, Iodines, Tritium and Carbon-14	Whole Body Thyroid Max Other Organ (Bone)	1.09E-02 mrem 2.92E-02 mrem 3.39E-02 mrem	- - -	0.04% 0.04% 0.13%
Total Dose **	**Whole Body** **Thyroid** **Max Other Organ (Bone)**	**3.08E-02 mrem** **3.08E-02 mrem** **3.39E-02 mrem**	**25 mrem** **75 mrem** **25 mrem**	**0.05%** **0.04%** **0.14%**

** Based on REMP TLD Results, given in Attachment 3.*

*** For the Critical Receptor identified in* Table 5*. Because Direct (TLD) dose is 0.0, then this represents the likely most-exposed individual. Doses in* ***bold*** *include contributions due to Iodines, Particulates, Tritium, Carbon-14, and Noble Gases.*

3.0 INTRODUCTION

3.1 About Nuclear Power

US Commercial nuclear power plants are generally classified as either Boiling Water Reactors (BWRs) or Pressurized Water Reactors (PWRs), based on their design. A BWR includes a single coolant system where water used as reactor coolant boils as it passes through the core and the steam generated is used to turn the turbine generator for power production. A PWR, in contrast, includes two separate water systems: radioactive reactor coolant and a secondary system. Reactor coolant is maintained under high pressure, preventing boiling. The high-pressure coolant is passed through a heat exchanger called a steam generator where the secondary system water is boiled, and the steam is used to turn the turbine generator for power production.

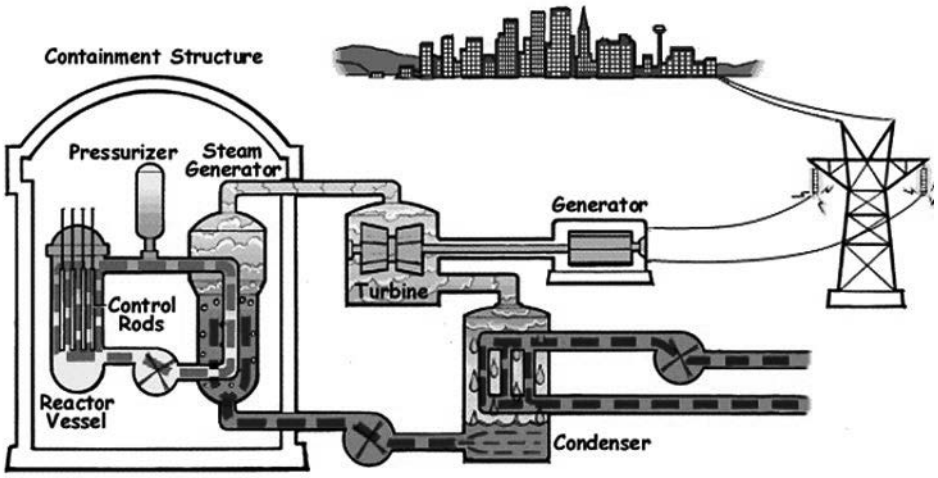

Figure 1, Pressurized Water Reactor (PWR) **[1]**

3.1 (Continued)

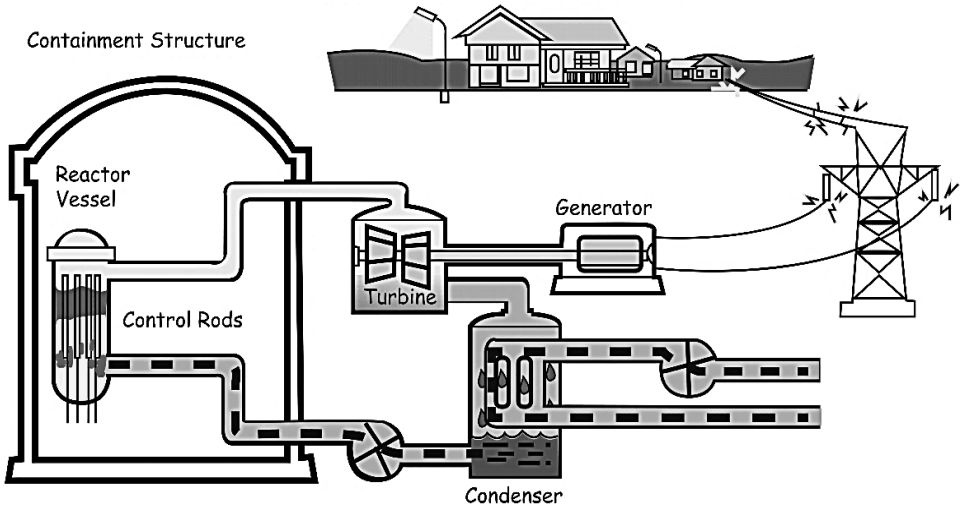

Figure 2, Boiling Water Reactor (BWR) **[2]**

Electricity is generated by a nuclear power plant similarly to the way that electricity is generated at other conventional types of power plants, such as those powered by coal or natural gas. Water is boiled to generate steam; the steam turns a turbine that is attached to a generator and the steam is condensed back into water to be returned to the boiler. What makes nuclear power different from these other types of power plants is that the heat is generated by fission and decay reactions occurring within and around the core containing fissionable uranium (U-235).

Nuclear fission occurs when certain nuclides (primarily U-233, U-235, or Pu-239) absorb a neutron and break into several smaller nuclides (called fission products) as well as producing some additional neutrons.

Fission results in production of radioactive materials including gases and solids that must be contained to prevent release or treated prior to release. These effluents are generally treated by filtration and/or hold-up prior to release. Releases are generally monitored by sampling and by continuously indicating radiation monitors. The effluent release data is used to calculate doses in order to ensure that dose to the public due to plant operation remains within required limits.

3.2 About Radiation Dose

Ionizing radiation, including alpha, beta, and gamma radiation from radioactive decay, has enough energy to break chemical bonds in tissues and result in damage to tissue or genetic material. The amount of ionization that will be generated by a given exposure to ionizing radiation is quantified as dose. Radiation dose is generally reported in units of millirem (mrem) in the US.

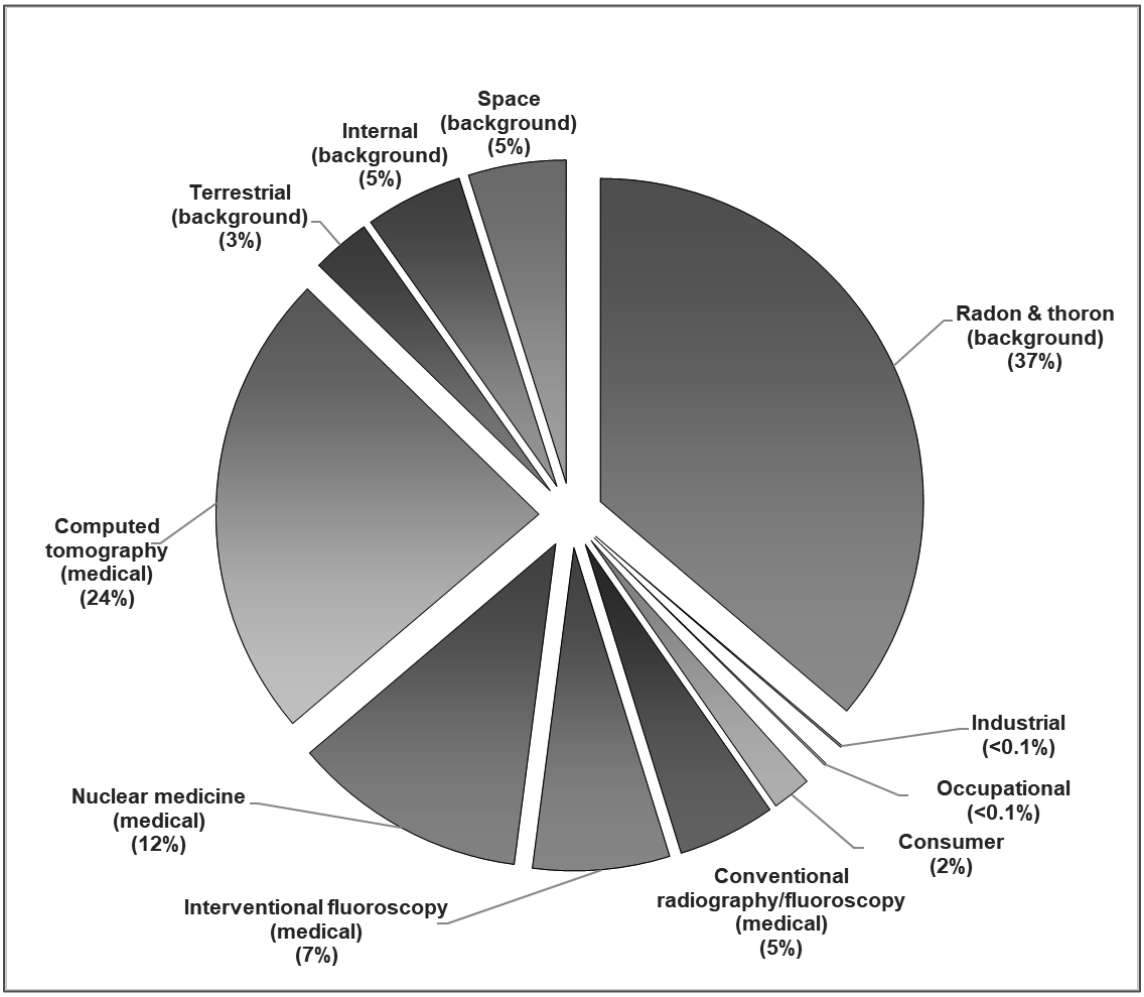

Figure 3, Sources of Radiation Exposure (NCRP Report No. 160) **[3]**

3.2 (Continued)

The National Council on Radiation Protection (NCRP) has evaluated the population dose for the US and determined that the average individual is exposed to approximately 620 mrem per year [3]. There are many sources for radiation dose, ranging from natural background sources to medical procedures, air travel, and industrial processes. Approximately half (310 mrem) of the average exposure is due to natural sources of radiation including exposure to radon, cosmic radiation, and internal radiation and terrestrial due to naturally occurring radionuclides. The remaining 310 mrem of exposure is due to man-made sources of exposure, with the most significant contributors being medical (48% of total mrem per year) due to radiation used in various types of medical scans and treatments. Of the remaining 2% of dose, most is due to consumer activities such as air travel, smoking cigarettes, and building materials. A small fraction of this 2% is due to industrial activities including generation of nuclear power.

Readers that are curious about common sources and effects of radiation dose that they may encounter can find excellent sources of information from the Health Physics Society, including the Radiation Fact Sheets [4], and from the US Nuclear Regulatory Commission website [5].

3.3 About Dose Calculation

Concentrations of radioactive material in the environment resulting from plant operations are very small and it is not possible to determine doses directly using measured activities of environmental samples. To overcome this, dose calculations based on measured activities of effluent streams are used to model the dose impact for Members of the Public due to plant operation and effluents. There are several mechanisms that can result in dose to Members of the Public, including: Ingestion of radionuclides in food or water; Inhalation of radionuclides in air; Immersion in a plume of noble gases; and Direct Radiation from the ground, the plant or from an elevated plume.

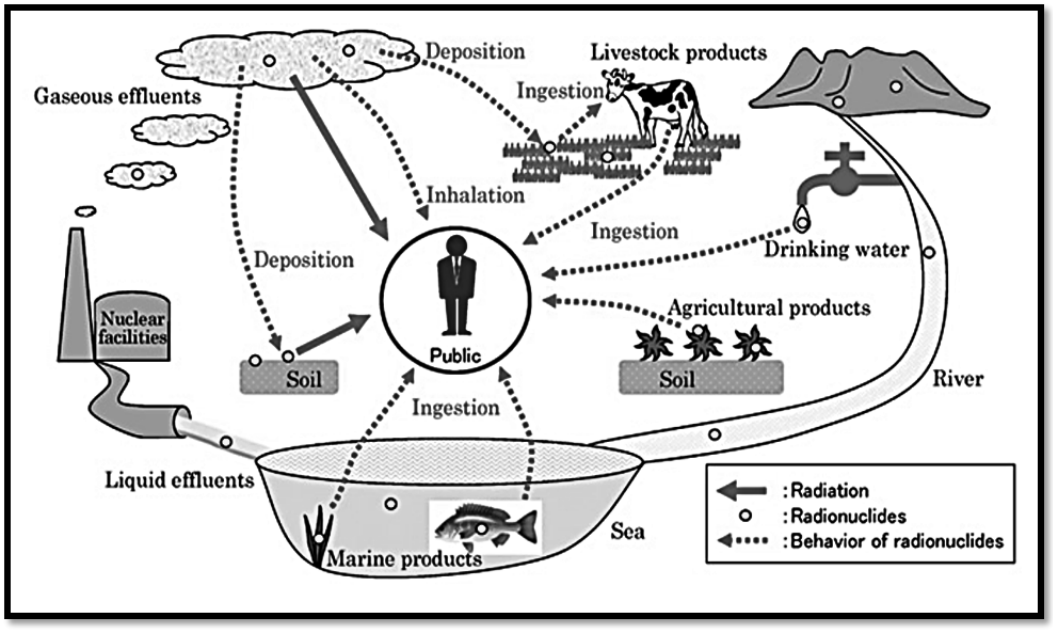

Figure 4, Potential exposure pathways to Members of the Public due to Plant Operations **[6]**

Each plant has an Offsite Dose Calculation Manual (ODCM) that specifies the methodology used to obtain the doses in the Dose Assessment section of this report. The dose assessment methodology in the ODCM is based on NRC Regulatory Guide 1.109 [7] and NUREG-0133 [8]. Doses are calculated by determining what the nuclide concentration will be in air, water, on the ground, or in food products based on plant effluent releases. Release points are continuously monitored to quantify what concentrations of nuclides are being released. For gaseous releases meteorological data is used to determine how much of the released activity will be present at a given location outside of the plant either deposited onto the ground or in gaseous form. Intake patterns and nuclide bio-concentration factors are used to determine how much activity will be transferred into animal milk or meat. Finally, human ingestion factors and dose factors are used to determine how much activity will be consumed and how much dose the consumer will receive. Inhalation dose is calculated by determining the concentration of nuclides and how much air is breathed by the individual.

3.3 (Continued)

For liquid releases, dilution and mixing factors are used to model the environmental concentrations in water. Drinking water pathways are modeled by determining the concentration of nuclides in the water at the point where the drinking water is sourced (e.g., taken from wells, rivers, or lakes). Fish and invertebrate pathways are determined by using concentrations at the release point, bioaccumulation factors for the fish or invertebrate and an estimate of the quantity of fish consumed.

Each year a Land Use Census is performed to determine what potential dose pathways currently exist within a five-mile radius around the plant, the area most affected by plant operations. The Annual Land Use Census identifies the locations of vegetable gardens, nearest residences, milk animals and meat animals. The data from the census is used to determine who is the likely to be most exposed to radiation dose as a result of plant operation.

There is significant uncertainty in dose calculation results, due to modeling dispersion of material released and bioaccumulation factors, as well as assumptions associated with consumption and land-use patterns. Even with these sources of uncertainty, the calculations do provide a reasonable estimate of the order of magnitude of the exposure. Conservative assumptions are made in the calculation inputs such as the number of various foods and water consumed, the amount of air inhaled, and the amount of direct radiation exposure from the ground or plume, such that the actual doses received are likely lower than the calculated dose. Even with the built-in conservatism, doses calculated for the maximum exposed individual due to plant operation are a very small fraction of the annual dose that is received due to other sources. The calculated doses due to plant effluents, along with REMP results, serve to provide assurance that radioactive effluents releases are not exceeding safety standards for the environment or people living near the plant.

4.0 DOSE ASSESSMENT FOR PLANT OPERATIONS

4.1 Regulatory Limits

Regulatory limits are detailed in station licensing documents such as the plant Technical Specifications and the Offsite Dose Calculation Manual (ODCM.) These documents contain the limits to which MNGP must adhere. MNGP drives to maintain the philosophy to keep dose "As Low As is Reasonably Achievable" (ALARA) and actions are taken to reduce the amount of radiation released to the environment. Liquid and gaseous release data show that the dose from MNGP is well below the ODCM limits. The instantaneous concentration of liquid radioactive material released shall be limited to ten times the concentration specified in 10 CFR 20, Appendix B, Table 2, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the total concentration released shall be limited to 2.0×10^{-4} microcuries/ml.

The annual whole body, skin and organ dose was computed using the 2024 source term using the dose calculation methodology provided in the ODCM. The calculated doses due to gaseous effluents are used to demonstrate compliance with offsite dose limits are presented in Table 1, Monticello Nuclear Generating Plant Dose Summary and Regulatory Limits for Gaseous Effluent Doses:

1. Fission and activation gases:

    a. Noble gases dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary shall be limited to the following:

        1) Less than or equal to 500 mrem/year to the total body

        2) Less than or equal to 3000 mrem/year to the skin

    b. Noble gas air dose due to noble gases released in gaseous effluents, from each reactor unit, to areas at and beyond the site boundary shall be limited to the following:

        1) Quarterly

            a) Less than or equal to 5 mrads gamma

            b) Less than or equal to 10 mrads beta

        2) Yearly

            a) Less than or equal to 10 mrads gamma

            b) Less than or equal to 20 mrads beta

4.1 (Continued)

2. Iodine, tritium, and all radionuclides in particulate form with half-lives greater than 8 days.

   a. The dose rate for iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from the site to areas at and beyond the site boundary shall be limited to the following:

      1) Less than or equal to 1500 mrem/yr to any organ

   b. The dose to a MEMBER OF THE PUBLIC from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 DAYS in gaseous effluents released, from each reactor unit, to areas at and beyond the site boundary shall be limited to the following:

      1) Quarterly

         a) Less than or equal to 7.5 mrem to any organ

      2) Yearly

         a) Less than or equal to 15 mrem to any organ

4.2 Regulatory Limits for Liquid Effluent Doses

1. The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each reactor unit, to unrestricted areas shall be limited to the following:

   a. Quarterly

      1) Less than or equal to 1.5 mrem total body

      2) Less than or equal to 5 mrem critical organ

   b. Yearly

      1) Less than or equal to 3 mrem total body

      2) Less than or equal to 10 mrem critical organ

4.3 40 CFR 190 Regulatory Dose Limits for a Member of the Public

1. Total Dose (40 CFR 190)

   a. The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC in the unrestricted area due to releases of radioactivity and to radiation from uranium fuel cycle sources shall be limited to the following:

      1) Less than or equal to 25 mrem, Total Body or any Organ except Thyroid.

      2) Less than or equal to 75 mrem, Thyroid.

4.4 Onsite Doses (Within Site Boundary)

MNGP classifies individuals within the site boundary as either occupationally exposed individuals or members of the public. This section evaluates dose to non-occupationally exposed workers and members of the public that may be onsite for various reasons. The report must include any other information as may be required by the Commission to estimate maximum potential annual radiation doses to the public resulting from effluent releases as required by 10 CFR 50.36a(a)(2). While within controlled or restricted areas, the limits from Sections 4.1 through 4.4 do not apply; however, 10 CFR 20.1301 dose limit of 100 mrem per year TEDE and dose rate limit of 2 mrem per hour from external sources continue to apply. Occupancy times within the controlled areas are generally sufficiently low to compensate for increase in the atmospheric dispersion factor above the site boundary. Groups of concern include individuals working in the Site Admin Building and/or Sub Yard. Use of a conservative assumption of 40 hours/week spent inside the site boundary by these groups conservatively represents the most-exposed individual.

Table 3, Onsite Doses (Within Site Boundary)

Location	Sector	Approx. Distance (Meters)	X/Q s/m^3	D/Q 1/m^2	Total Body Dose (mrem)		External Dose	Total
					Noble Gas	Iodine, Particulate, C-14 & H-3	TLD or OSLD	
Site Admin Building / Sub Yard	SSE (H)	100 m	2.10E-05	2.00E-07	4.13E-04	1.12E-02	0.00E+00	1.16E-02

5.0 SUPPLEMENTAL INFORMATION

5.1 Gaseous Batch Releases

5.1.1 MNGP

Number of batch releases	2
Total time period for a batch release	1393.0 minutes
Maximum time period for a batch release	1020.0 minutes
Average time period for a batch release	696.5 minutes
Minimum time period for a batch release	373.0 minutes

5.2 Liquid Batch Releases

5.2.1 MNGP

Number of batch releases	0
Total time period for a batch release	0 minutes
Maximum time period for a batch release	0 minutes
Average time period for a batch release	0 minutes
Minimum time period for a batch release	0 minutes
Average total flow during period of release	0 gpm

5.3 Abnormal Releases

5.3.1 Gaseous Abnormal Releases

Number of releases	0
Total activity released	0 Ci

MNGP did not have any abnormal gaseous releases in the 2024 reporting period.

5.3.2 Liquid Abnormal Releases & Discharges

Number of releases	12
Total activity released	2.31E-02 Ci

As part of Monticello Nuclear Generating Plant's ongoing response to the Abnormal Release to groundwater reported in 2022, MNGP has been monitoring the migration of the plume from that release. The plume reached MW-33A and MW-37A on July 27, 2023 and since that date MNGP has been reporting a modeled Abnormal Discharge to the Mississippi River. MNGP's groundwater vendor used the software MODFLOW to determine flux to the river from each respective monitoring well interface. The model assumed each interface extended half the distance to the adjacent monitoring wells in either direction. The flux was calculated daily using the developed model. Tritium concentrations at each well interface were determined daily by linearly interpolating between samples. The wells containing Tritium were considered part of the interface until a sample was taken that was below the minimum detectable concentration. These results were composited monthly and reported as an Abnormal Discharge. The results of the analysis for the modeled Abnormal Discharge to the Mississippi River are given below in Table 4. In 2024 this analysis resulted in a total of 2.31E-02 Ci being discharged.

Table 4, Modeled Abnormal Discharge from MNGP To Mississippi River

Month	^{3}H Activity Discharged (Ci)
January 2024	5.78E-04
February 2024	2.44E-03
March 2024	2.94E-03
April 2024	2.77E-03
May 2024	3.05E-04
June 2024	1.67E-04
July 2024	1.03E-03
August 2024	2.07E-03
September 2024	7.37E-04
October 2024	3.25E-03
November 2024	3.40E-03
December 2024	3.45E-03
Total 2024	**2.31E-02**

On April 11, 2025, samples taken from MW-26B and MW-28B were positive for tritium at concentrations of 13,400 pCi/L and 9,000 pCi/L respectively. These Sentinel Wells were less than detectable for their last sample period on May 22, 2024. Tritium was detected at the nearest upgradient well, MW-15B, on May 23, 2024, at a concentration of 350 ± 167 pCi/L. This is due to the ongoing migration of the plume resulting from the release first reported in 2022; this is not due to a new release. The above analysis and MODFLOW model are currently developed for the shallower 'A' wells. These newly positive wells require further analysis by our groundwater vendor to model, since the 'B' Wells are deeper wells and sample from a different aquifer than the shallower 'A' wells. The modeling and analysis are ongoing; however, if the plume is determined to have interacted with the Mississippi River in 2024, then an errata will be submitted within 90 days following approval of the analysis.

5.4 Land Use Census

In the 2024 Land Use Census there was 1 sector where the highest meat animal receptor D/Q changed by more than 20%. This was due to the Sector J (South) Cows no longer being present at 4.4 miles, resulting in a 100% change. Of note, there is a Meat & Garden location within the sector. The sector with the highest D/Q remained the same for Meat animals.

For 2024, the Critical Receptor identified by the MNGP Land Use Census has remained the same since the last Land Use Census. The Critical Receptor was identified as a Child at a Garden in the SE Sector 1.1 miles away from the plant and the max organ being Thyroid. The 2024 Land Use Census is performed using the 2023 effluent data as the input; the 2024 data identified the same location but with the max organ being Bone.

Table 5, 2024 Critical Receptor

SECTOR	**SE**
DISTANCE	**1.1 miles**
PATHWAYS	**Ground Plane, Inhalation, and Vegetable**
Age Group	**Child**
Organ	**Thyroid**

Since 2019, one milk cow has been located in the NNE sector at 3.2 miles. The cow gave birth approximately four years ago and discussion with the owner confirmed they now milk the newer cow. Discussion with the owner indicates that when the cow is producing milk there is enough for the family to use, but not enough extra to provide samples in the quantity/frequency required for the site. There is also a beef cow and a garden at this location (Milk, Meat, and Vegetable exposure pathways present.) Due to the relatively low deposition parameter, the calculated dose at this location remains lower than other vegetable locations that are closer to the plant in high D/Q sectors. Milk samples are required for three locations within 1 mile or three locations where doses are calculated to be > 1mRem/year per ODCM-07.01. The currently identified milk location is outside 3 miles and maximum calculated dose by all pathways was 0.0172 mRem to infant thyroid.

Milk samples were not available during 2024 due to the limited milk supply of the animal, as discussed above. The required compensatory vegetation samples were collected and analyzed (per ODCM-07.01, Table 1.)

Corn and Potato sampling was not required because no routine liquid discharges were made during the growing season. Additionally, the Land Use Census found that there are no water use permits for irrigation using water from the Mississippi River within 5 miles downstream of the plant.

5.5 Meteorological Data

MNGP accumulated 99.92% of meteorological data in 2024, satisfying the 90% requirement. Joint Frequency Distribution Tables are held onsite and available for review upon request.

5.6 Effluent Radiation Monitors Out of Service Greater Than 30 Days

No effluent radiation monitors were out of service beyond 30 days in the 2024 reporting period. 110/03/2025

5.7 Offsite Dose Calculation Manual (ODCM) Changes

MNGP made 10 revisions to the ODCM during the 2024 reporting period. These changes are detailed in Table 6 below.

Table 6, 2024 ODCM Changes

Date of Change	ODCM Section	Revision	Description of Change
02/25/2025	ODCM-01.01	10	Revised Definition of Instrument Functional Test to allows for the insertion of simulated or an actual signal for performance of test.
10/30/2024	ODCM-02.01	15	Added Water Storage Pond #2A and its associated instrumentation.
11/19/2024	ODCM-02.01	16	Revised 2.5.2 Water Storage Pond Leak Detection Systems to place a control on the level within the interstitial liner space.
12/19/2024	ODCM-02.01	17	Added Water Storage Ponds #2B and 2C and their associated instrumentation
3/6/2025	ODCM-02.01	18	Added the Water Storage Pond Transfer System Radioactivity Monitor and Water Storage Pond Transfer System Flow Meter. Defined AUTOMATIC mode operation of the Water Storage Pond Transfer System. Revised Water Storage Pond Transfer System - BATCH mode operation to allow for the Rad Monitor or Flow Meter to take credit for the new equipment for the respective requirements.
10/30/2024	ODCM-03.01	17	Added Water Storage Pond #2A and its associated instrumentation.
12/19/2024	ODCM-03.01	18	Added Water Storage Ponds #2B and 2C and their associated instrumentation.
2/25/2025	ODCM-04.01	5	Added the Water Storage Pond Transfer System Radiation Monitor and the calculated ODCM setpoint for the detector.
10/30/2024	ODCM-05.01	15	Added terms for new gaseous release points, Water Storage Ponds #2A, 2B, and 2C to equations used for dose calculation contained within the ODCM.
10/30/2024	ODCM-APP-A	7	Adds dispersion and deposition parameters for the new gaseous release points Water Storage Ponds #2A,2B, and 2C.

5.8 Process Control Program (PCP) Changes

Monticello Nuclear Generating Plant did not revise the Process Control Program in 2024.

5.9 Radioactive Waste Treatment System Changes

Monticello Nuclear Generating Plant did not make any changes to any radioactive waste treatment systems in 2024.

5.10 Water Storage Ponds #2A, #2B, and #2C

MNGP has established a new gaseous release point within this reporting period. The site in-serviced the Water Storage Pond #2A on October 30, 2024. The site identified Water Storage Ponds #2B and #2C as additional gaseous release points; Water Storage Ponds #2B and #2C were not in-serviced during the 2024 release period. The original Water Storage Pond mentioned in the 2023 ARERR was renamed to Water Storage Pond #1. The Water Storage Ponds are designed to hold the pumped groundwater as part of the ongoing tritium remediation efforts. Over time an amount of tritiated water within the respective Water Storage Ponds has naturally evaporated. The site used temporary above ground storage tanks to contain remediated Tritiated water while the additional ponds were constructed. The evaporation from these tanks was accounted for as well. In the 2024 release period the amount Tritium released from Water Storage Ponds was 0.57 Ci.

5.10.1 Independent Spent Fuel Storage Installation (ISFSI) Monitoring Program

The ISFSI at Monticello Nuclear Generating Plant was constructed west of the plant in 2007. The initial loading campaign was completed in 2008 with 10 Horizontal Storage Modules (HSM's) loaded with spent fuel. In 2013 an additional five HSM's were loaded with spent fuel. In 2016 one additional HSM was loaded. In 2018 an ISFSI campaign loaded an additional 14 HSM's, bringing the total number of stored modules to 30. There were no additions to the ISFSI in 2024.

5.10.2 **Carbon-14**

Carbon-14 (C-14) is a naturally occurring radionuclide with a 5,730-year half-life. Nuclear weapons testing in the 1950s and 1960s significantly increased the amount of C-14 in the atmosphere. Nuclear power plants also produce C-14, but the amount is infinitesimal compared to what has been distributed in the environment due to weapons testing and what is produced by natural cosmic ray interactions.

In accordance with Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste," the NRC recommended re-evaluating "principal radionuclides" and reporting C-14 as appropriate. Carbon-14 production and release estimates were calculated using active core coolant mass, average neutron flux by energy and reactor coolant nitrogen concentrations to determine Carbon-14 generation based upon an effective full power year. The estimated generation for Monticello Nuclear Generating Plant during 2024 was 7.45 Curies.

Public dose estimates were performed using methodology from the ODCM which is based on Regulatory Guide 1.109 methodology. C-14 dose is included in dose calculation results in Tables 1 and 2 .

5.10.3 **Errata/Corrections to Previous ARERRs**

Included with this report is a correction to the 2023 ARERR. The Water Storage Pond #1 Level Monitor was improperly reading 0.2 feet lower than the actual water level due to an improper calibration; this was captured in MNGP QIM 501000082876. Water Storage Pond #1 has slanted walls, so as the pond level rises the number of gallons required to raise the level increases. The total level rise in the WSP was used when quantifying the release of tritium via natural evaporation. By the instrument displaying a level 0.2 ft lower than actual, it appeared that a lower number of gallons remained in the pond than the actual remaining volume. This resulted in MNGP overreporting the amount of Tritium released to the atmosphere via natural evaporation of Water Storage Pond #1. The following corrects the reported dose in Q4 to the Critical Receptor given in Table 2 (page 8) and the amount of Tritium reported in Tables 11 (pg. 25) & 13 (pg. 27) for Summation of all Releases and Ground Level Releases, respectively. The three results are lower than what were previously reported. No limits or guidelines are challenged due to this errata.

6.0 NEI 07-07 ONSITE RADIOLOGICAL GROUNDWATER MONITORING PROGRAM

Monticello Nuclear Generating Plant has developed a Groundwater Protection Initiative (GPI) program in accordance with NEI 07-07, Industry Ground Water Protection Initiative – Final Guidance Document [9]. The purpose of the GPI is to ensure timely detection and an effective response to situations involving inadvertent radiological releases to groundwater in order to prevent migration of licensed radioactive material off-site and to quantify impacts on decommissioning. During 2024, MNGP collected and analyzed groundwater samples in accordance with the requirements of FP-CY-GWPP-01.

This section is included in this report to communicate results of NEI 07-07 Radiological Groundwater Monitoring Program. Monitoring wells installed as part of GPI program are sampled and analyzed as summarized in Table 6. In addition to reporting results from NEI 07-07 monitoring wells, voluntary communications to offsite governmental agencies for onsite leaks or spills per NEI 07-07 Objective 2.2, are also reported as part of this report. It is important to note, samples and results taken in support of NEI 07-07 groundwater monitoring program are not part of the Radiological Environmental Monitoring Program (REMP) but should be reported as part of ARERR.

Table 7 contains the current sampling frequencies for MNGP. The sampling frequencies below reference the frequency at which samples were sent to our certified vendor for analysis. There are some exceptions to this list. Monitoring Wells that were below detectable for multiple consecutive samples in Monticello's in-house laboratory were not sent for analysis. Monitoring Well 33A was not sent for analysis during August and September due to being less than detectable in our in-house laboratory. Monitoring/Pumping Well 13A was unable to be sampled between June and August due to pump failure. Monitoring Well 37A was not sent in January since it was less than detectable in MNGP's in-house laboratory.

Table 7, Groundwater Monitoring Well Sampling Frequencies

Frequency	# of Wells	Wells*
Quarterly	10	MW-1, MW-1B, **MW-2**, **MW-3**, MW-10B, MW-11, **MW-14**, MW-15B, MW-23A, **MW-24**
Monthly	18	MW-4, MW-4B, MW-9, MW-9B, MW-10 (PW-10A), MW-12A, MW-12B, MW-13A (PW-13A), MW-13B, MW-15A, MW-16A, MW-16B, MW-30A, **MW-26B**, **MW-27B**, **MW-28B, MW-33A**, **MW-37A**
Annual	13	MW-5, **MW-6**, MW-7, MW-8, MW-17A, MW-23B, MW-29A, MW-31B, MW-101R[1], MW-102[1], MW-103[1], MW-104[1], MW-105[1]
Sampled on Site, Not Currently Sent to Vendor	12	MW-20A, **MW-21A**, **MW-26A**, **MW-27A**, **MW-28A**, MW-29B, MW-30B, MW-31B, **MW-33B**, **MW-37B**, **MW-48B**, MW-50A
Sampled When Gradient Control Wells are Operating	4	**MW-17A, MW-66A**, **MW-67A**, **MW-67B**, **MW-68A**
Developed, Not Currently Sampled	5	MW-17B**,** MW-19A, MW-19B, **MW-48A, MW-58A,**

** Monitoring Wells in **BOLD** typeface are considered sentinel wells*
[1] MW-101R, MW-102, MW-103, MW-104, MW-105 are tested for Tritium only

The current groundwater monitoring program includes 62 monitoring wells and 8 pumping wells at 42 different locations. 20 of the locations include a “nested” configuration, where one sample is taken at the level of the water table (GWPP locations ending with an A) while a second sample can be taken from deeper water (GWPP locations ending with a B). The site has also developed 3 Gradient Control Wells, wells that pump clean water from the ground and return it to the river. The purpose of these wells is to maintain a flat gradient on the water table to mitigate further migration of the plume offsite. The site’s groundwater vendor recommends when to operate these wells based on the water table and water level measurements.

As a part of the Water Storage Pond expansion, Monitoring Wells 101R, 104, and 105 have been developed around the ponds. The construction of the Water Storage Ponds required MW-101 to be sealed and capped. At the conclusion of construction, MW-101R was developed in a near-by location. This, along with the Water Storage Pond Leak Detection Systems, ensures the ponds are not leaking into the surrounding groundwater. They are only tested for Tritium currently, for there is no pathway for

gamma isotopes to these wells. The contents of water transferred to the pond are verified free of gamma nuclides before addition.

The 2024 Radiological Groundwater Monitoring Program results are provided in Attachment 5, Groundwater Data. No groundwater monitoring locations had detectable gamma or HTD (hard-to-detect) in 2024.

As a result of the ongoing migration of the plume from the Abnormal Release first reported in 2022, 24 monitoring wells had detectable Tritium in 2024. The results do not indicate any additional release has occurred. The highest result seen in 2024 was MW-9's duplicate January sample with a concentration of 291,000 ± 2,300 pCi/L. As of the end of 2024, 2 wells, MW-13B and MW-23A, remain above the Tritium concentration EPA drinking water standard of 20,000 pCi/L. MNGP continues remediation activities.

A result of note is MW-17A's October 22, 2024 sample which was positive for Tritium at a concentration of 731 ± 166 pCi/L. MW-17A is labeled as a Sentinel Well in Table 7. This result was not considered a release due to no positive samples at the downgradient Gradient Control Wells; the gradient control wells were turned off following this result to prevent pulling the plume further in this direction. Subsequent samples at MW-17A analyzed in MNGP's onsite laboratory returned to less than detectable. This was captured in MNGP QIM #501000091320.

6.1 Voluntary Notification

During 2024, Monticello Nuclear Generating Plant did not make a voluntary NEI 07-07 notification to State/Local officials, NRC, and to other stakeholders required by site procedures.

7.0 BIBLIOGRAPHY

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[12] "10 CFR 20 - Standards for Protection Against Radiation," US Nuclear Regulatory Commission, Washington, DC.

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[17] "Regulatory Guide 4.13 - Performance, Testing, and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications, Revision 2," Nuclear Regulatory Commision, June, 2019.

[18] "Regulatory Guide 4.15 - Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination) -- Effluent Streams and the Environment," Nuclear Regulatory Commission, July, 2007.

Attachment 1, ARERR Release Summary Tables (RG-1.21 Tables)

1.0 GASEOUS EFFLUENTS

Table 8, Gaseous Effluents Summation of All Releases MNGP [2]

A.	Fission & Activation Gases	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error %
1.	Total Release	Ci	3.25E+01	2.22E+01	2.02E+01	2.12E+01	5.00E+01
2.	Average release rate for the period	μCi/sec	4.14E+00	2.82E+00	2.54E+00	2.67E+00	
B.	Iodine						
1.	Total Iodine – 131	Ci	5.51E-04	6.74E-04	8.02E-04	5.29E-04	3.20E+01
2.	Average release rate for the period	μCi/sec	7.00E-05	8.57E-05	1.01E-04	6.65E-05	
C.	Particulates						
1.	Particulates with half-lives > 8 days	Ci	1.94E-04	4.32E-04	7.66E-05	8.76E-05	4.00E+01
2.	Average release rate for the period	μCi/sec	2.46E-05	5.50E-05	9.64E-06	1.10E-05	
D.	Tritium						
1.	Total Release	Ci	4.04E+00	5.53E+00	5.84E+00	4.70E+00	3.30E+01
2.	Average release rate for the period	μCi/sec	5.13E-01	7.03E-01	7.35E-01	5.91E-01	
E.	Gross Alpha						
1.	Total Release	Ci	2.52E-07	1.62E-07	3.94E-07	2.92E-07	5.00E+01
2.	Average release rate for the period	μCi/sec	3.21E-08	2.06E-08	4.95E-08	3.68E-08	
F.	Carbon-14						
1.	Total Release	Ci	1.67E+00	1.90E+00	1.95E+00	1.93E+00	
2.	Average release rate for the period	μCi/sec	2.13E-01	2.41E-01	2.45E-01	2.43E-01	

[2] % of limit is provided in Table 1, Monticello Nuclear Generating Plant Dose Summary

Table 9, Gaseous Effluents – Ground Level Release Batch Mode MNGP

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
Ar-41	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-87	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-88	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-138	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines						
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates						
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium						
H-3	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 10, Gaseous Effluents – Ground Level Release Continuous Mode MNGP

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
Ar-41	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-87	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-88	Ci	0.00E+00	3.89E-01	0.00E+00	0.00E+00	3.89E-01
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	5.15E-01	7.86E-01	1.05E+00	4.05E-01	2.76E+00
Xe-135m	Ci	5.20E-01	1.16E+00	7.06E-01	1.26E+00	3.65E+00
Xe-138	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**1.04E+00**	**2.34E+00**	**1.75E+00**	**1.66E+00**	**6.79E+00**
Iodines						
I-131	Ci	9.97E-05	1.20E-04	1.71E-04	1.04E-04	4.95E-04
I-133	Ci	7.07E-04	9.82E-04	1.39E-03	8.21E-04	3.90E-03
I-135	Ci	0.00E+00	7.44E-04	3.93E-05	6.13E-04	1.40E-03
Total for Period	**Ci**	**8.07E-04**	**1.85E-03**	**1.60E-03**	**1.54E-03**	**5.80E-03**
Particulates						
Mn-54	Ci	1.75E-05	3.54E-05	0.00E+00	0.00E+00	5.29E-05
Co-58	Ci	4.06E-05	9.04E-05	0.00E+00	0.00E+00	1.31E-04
Fe-59	Ci	2.32E-06	0.00E+00	0.00E+00	0.00E+00	2.32E-06
Co-60	Ci	5.77E-05	1.23E-04	6.32E-06	1.95E-05	2.07E-04
Zn-65	Ci	2.40E-05	7.57E-05	0.00E+00	0.00E+00	9.97E-05
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	1.70E-05	2.06E-06	6.32E-06	1.95E-05	4.49E-05
Ba-140	Ci	0.00E+00	6.75E-05	1.38E-05	0.00E+00	8.13E-05
Total for Period	**Ci**	**1.59E-04**	**3.94E-04**	**3.44E-05**	**5.81E-05**	**6.46E-04**
Tritium						
H-3	Ci	3.02E+00	4.03E+00	4.22E+00	3.55E+00	1.48E+01
Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 11, Gaseous Effluents – Elevated Level Release Batch Mode MNGP

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
Ar-41	Ci	1.44E-02	5.67E-04	0.00E+00	0.00E+00	1.50E-02
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-87	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-88	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	2.42E-03	0.00E+00	0.00E+00	0.00E+00	2.42E-03
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	2.07E-03	0.00E+00	0.00E+00	0.00E+00	2.07E-03
Xe-135m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-138	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**1.89E-02**	**5.67E-04**	**0.00E+00**	**0.00E+00**	**1.95E-02**
Iodines						
I-131	Ci	2.16E-08	7.03E-09	0.00E+00	0.00E+00	2.86E-08
I-132	Ci	1.18E-07	2.47E-08	0.00E+00	0.00E+00	1.43E-07
I-133	Ci	1.62E-07	0.00E+00	0.00E+00	0.00E+00	1.62E-07
I-134	Ci	1.23E-07	0.00E+00	0.00E+00	0.00E+00	1.23E-07
I-135	Ci	1.92E-07	0.00E+00	0.00E+00	0.00E+00	1.92E-07
Total for Period	**Ci**	**6.16E-07**	**3.17E-08**	**0.00E+00**	**0.00E+00**	**6.48E-07**
Particulates						
Mn-54	Ci	1.18E-09	4.07E-09	0.00E+00	0.00E+00	5.25E-09
Co-58	Ci	1.46E-09	5.02E-09	0.00E+00	0.00E+00	6.48E-09
Co-60	Ci	2.36E-08	5.64E-09	0.00E+00	0.00E+00	2.92E-08
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ba-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Os-191	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**2.63E-08**	**1.47E-08**	**0.00E+00**	**0.00E+00**	**4.10E-08**
Tritium						
H-3	Ci	4.58E-03	9.91E-05	0.00E+00	0.00E+00	4.68E-03

Table 11, Gaseous Effluents – Elevated Level Release Batch Mode MNGP

Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 12, Gaseous Effluents – Elevated Level Release Continuous Mode MNGP

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
Ar-41	Ci	2.64E-01	2.32E-02	0.00E+00	0.00E+00	2.87E-01
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	Ci	8.12E-01	3.97E-02	0.00E+00	0.00E+00	8.52E-01
Kr-87	Ci	6.29E-01	6.16E-02	1.81E-02	0.00E+00	7.09E-01
Kr-88	Ci	1.79E+00	8.07E-02	0.00E+00	0.00E+00	1.87E+00
Xe-133	Ci	8.59E+00	8.16E+00	7.89E+00	7.20E+00	3.18E+01
Xe-133m	Ci	1.26E-01	1.92E-01	1.07E-01	8.04E-02	5.05E-01
Xe-135	Ci	7.46E+00	1.24E+00	8.25E-01	8.16E-01	1.03E+01
Xe-135m	Ci	2.16E+00	2.34E+00	2.22E+00	2.00E+00	8.72E+00
Xe-137	Ci	5.56E+00	3.89E+00	3.54E+00	6.09E+00	1.91E+01
Xe-138	Ci	4.10E+00	3.84E+00	3.85E+00	3.37E+00	1.52E+01
Total for Period	**Ci**	**3.15E+01**	**1.99E+01**	**1.84E+01**	**1.96E+01**	**8.94E+01**
Iodines						
I-131	Ci	4.15E-04	5.54E-04	6.32E-04	4.25E-04	2.03E-03
I-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	3.00E-03	4.59E-03	5.23E-03	3.21E-03	1.60E-02
I-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-135	Ci	5.20E-03	7.56E-03	8.41E-03	5.13E-03	2.63E-02
Total for Period	**Ci**	**8.65E-03**	**1.27E-02**	**1.43E-02**	**8.77E-03**	**4.44E-02**
Particulates						
Mn-54	Ci	1.26E-07	3.75E-08	0.00E+00	0.00E+00	1.64E-07
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	1.23E-06	4.09E-07	7.29E-07	2.80E-07	2.65E-06
Sr-89	Ci	1.14E-05	9.31E-06	9.13E-06	7.08E-06	3.69E-05
Sr-90	Ci	0.00E+00	6.41E-08	8.08E-08	0.00E+00	1.45E-07
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	2.87E-07	2.61E-07	1.06E-07	0.00E+00	6.54E-07
Ba-140	Ci	2.07E-05	2.83E-05	3.22E-05	2.20E-05	1.03E-04
Os-191	Ci	8.46E-07	2.05E-08	0.00E+00	0.00E+00	8.67E-07
Total for Period	**Ci**	**3.46E-05**	**3.84E-05**	**4.22E-05**	**2.94E-05**	**1.44E-04**
Tritium						
H-3	Ci	1.01E+00	1.50E+00	1.62E+00	1.15E+00	5.28E+00

Table 12, Gaseous Effluents – Elevated Level Release Continuous Mode MNGP

Carbon-14						
C-14	Ci	1.67E+00	1.90E+00	1.95E+00	1.93E+00	7.45E+00

2.0 LIQUID EFFLUENTS

Table 13, Liquid Effluents – Summation of All Releases MNGP [3]

A.	Fission & Activation Products	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error %
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+01
2.	Average diluted concentration	μCi/mL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
B.	Tritium						
1.	Total Release	Ci	5.96E-03	3.24E-03	3.83E-03	1.01E-02	2.50E+01
2.	Average diluted concentration	μCi/mL	3.93E-06	2.98E-06	2.13E-06	4.16E-06	
C.	Dissolved & Entrained Gases						
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+01
2.	Average diluted concentration	μCi/mL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
D.	Gross Alpha Activity						
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+01
E.	Volume of Waste Released (prior to dilution)	Liters	1.52E+06	1.09E+06	1.80E+06	2.43E+06	
F.	Volume of Dilution Water Used During Period	Liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

[3] % of limit is provided in Table 1, Monticello Nuclear Generating Plant Dose Summary

Table 14, Batch Mode Liquid Effluents {Monticello Nuclear Generating Plant}

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission and Activation Products						
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-55	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ag-110m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium						
H-3	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Entrained Gases						
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 15, Continuous Mode Liquid Effluents MNGP

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission and Activation Products						
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-55	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ag-110m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium						
H-3	Ci	5.96E-03	3.24E-03	3.83E-03	1.01E-02	2.31E-02
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Entrained Gases						
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Attachment 2, Solid Waste Information

1.0 SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

Table 16, Types of Solid Waste Summary MNGP

Types of Waste	Total Volume (m^3)	Total Activity (Ci)	Est. Total Error (%)
a. Spent resins, filter sludges, evaporator bottoms, etc.	1.57E+01	3.88E+01	25
b. Dry compressible waste, contaminated equip, etc.	3.53E+02	9.68E-01	25
c. Irradiated components, control rods, etc.	0.00E+00	0.00E+00	25
d. Other (describe)	2.55E+00	1.49E-04	25

2.0 ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY WASTE TYPE) ONLY >1% ARE REPORTED. [NOTE 1]

Table 17, Major Nuclides MNGP

Major Nuclide Composition	Nuclide	% Abundance	Curies
a. Spent resins, filter sludges, evaporator bottoms, etc.	Mn-54	4.36	1.69E+00
	Fe-55	39.16	1.52E+01
	Co-60	45.88	1.78E+01
	Ni-63	2.74	1.06E+00
	Zn-65	2.8	1.09E+00
	Cs-137	3.66	1.42E+00
b. Dry compressible waste, contaminated equip, etc.	Mn-54	5.74	5.55E-02
	Fe-55	37.42	3.62E-01
	Co-58	1.47	1.42E-02
	Co-60	47.39	4.59E-01
	Zn-65	4.97	4.81E-02
c. Irradiated components, control rods, etc.	N/A	N/A	0.00E+00
d. Other	Mn-54	7.22	1.08E-05
	Fe-55	13.14	1.96E-05
	Co-60	70.86	1.06E-04
	Zn-65	3.61	5.39E-06
	Sb-125	1.06	1.58E-06

3.0 SOLID WASTE DISPOSITION

Table 18, Solid Waste Disposition MNGP

Number of Shipments	Mode of Transportation	Destination
1	Hittman Transport	Energy Solutions (Bear Creek DAWL) 1560 Bear Creek Road Oak Ridge, TN 37830
4	Hittman Transport	Energy Solutions (Memphis Processing Facility) 1790 Dock Street Memphis, TN 38109
2	Interstate Ventures, Inc.	Waste Control Specialists LLC Compact Waste Facility 9998 West, TX-176 Andrews TX, 79714
1	Xcel Energy Trucking	Energy Solutions (Bear Creek DAWL) 1560 Bear Creek Road Oak Ridge, TN 37830
6	Xcel Energy Trucking	UniTech Services Group, Inc. (TN) Oak Ridge Service Center 2323 Zirconium Rd Oak Ridge, TN 37830

4.0 IRRADIATED FUEL DISPOSITION

Table 19, Irradiated Fuel Shipments Disposition MNGP

Number of Shipments	Mode of Transportation	Destination
0	N/A	N/A

There were no shipments of irradiated fuel from MNGP in 2024.

Attachment 3, Radiological Environmental Monitoring Program TLD Results

		Quarterly Baseline, B_Q (mrem)		Normalized Quarterly Monitoring Data, M_Q (mrem per standard quarter)				Quarterly Facility Dose, $F_Q = M_Q - B_Q$ (mrem)				Annual Baseline, B_A (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A = M_A - B_A$ (mrem)
		Q1	Q2-Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Inner Ring	M01A	13.2	15.1	16.1	14.7	17.4	16.7	ND	ND	ND	ND	58.5	64.9	ND
	M02A	14.2	16.1	14.4	13.8	15.9	15.6	ND	ND	ND	ND	62.6	59.6	ND
	M03A	13.9	15.7	*	15.0	15.8	16.3	*	ND	ND	ND	61.0	62.8	ND
	M04A	13.1	15.6	12.9	12.8	15.0	14.1	ND	ND	ND	ND	59.8	54.8	ND
	M05A	13.2	15.9	13.3	11.8	15.3	14.0	ND	ND	ND	ND	60.8	54.4	ND
	M06A	14.1	16.1	14.5	13.1	16.3	15.8	ND	ND	ND	ND	62.4	59.8	ND
	M07A	13.9	15.9	14.3	12.8	15.5	15.4	ND	ND	ND	ND	61.4	58.0	ND
	M08A	13.9	15.8	14.3	12.5	15.8	14.5	ND	ND	ND	ND	61.5	57.1	ND
	M09A	14.3	15.8	14.3	12.7	16.5	14.2	ND	ND	ND	ND	61.5	57.6	ND
	M10A	14.3	16.4	14.2	12.9	16.0	14.4	ND	ND	ND	ND	63.4	57.4	ND
	M11A	15.4	16.9	15.0	14.5	17.2	15.9	ND	ND	ND	ND	66.0	62.7	ND
	M12A	15.5	17.1	14.3	12.9	16.0	15.4	ND	ND	ND	ND	66.5	58.6	ND
	M13A	13.6	14.6	12.0	10.8	*	14.5	ND	ND	*	ND	57.3	49.8	ND
	M14A	14.3	16.3	15.1	14.0	16.9	16.2	ND	ND	ND	ND	63.4	62.2	ND
Outer Ring	M01B	14.3	15.4	12.7	12.3	15.0	14.6	ND	ND	ND	ND	60.7	54.6	ND
	M02B	14.6	15.4	13.9	12.9	14.9	14.6	ND	ND	ND	ND	60.8	56.3	ND
	M03B	12.2	12.9	11.9	10.4	12.6	13.3	ND	ND	ND	ND	50.9	48.2	ND
	M04B	12.9	14.4	13.1	12.3	14.0	13.5	ND	ND	ND	ND	56.1	52.8	ND
	M05B	14.6	16.0	13.8	13.5	14.9	14.4	ND	ND	ND	ND	62.5	56.6	ND
	M06B	12.8	15.4	14.3	13.2	15.1	*	ND	ND	ND	*	58.8	56.8	ND
	M07B	15.3	16.1	14.3	12.9	15.0	14.2	ND	ND	ND	ND	63.5	56.4	ND
	M08B	13.6	14.8	13.2	12.4	14.7	13.2	ND	ND	ND	ND	58.0	53.5	ND
	M09B	14.2	16.7	14.6	13.8	16.6	15.3	ND	ND	ND	ND	64.3	60.3	ND
	M10B	14.5	16.0	14.0	13.5	15.5	14.5	ND	ND	ND	ND	62.5	57.5	ND
	M11B	13.9	16.0	14.5	14.0	16.4	14.9	ND	ND	ND	ND	61.8	59.8	ND
	M12B	13.5	15.6	13.5	13.2	15.4	14.6	ND	ND	ND	ND	60.3	56.7	ND
	M13B	13.5	14.4	14.2	14.4	15.4	15.2	ND	ND	ND	ND	56.6	59.2	ND
	M14B	13.4	15.5	14.9	13.7	16.1	15.3	ND	ND	ND	ND	59.9	59.9	ND
	M15B	13.5	15.0	13.3	13.2	16.3	13.9	ND	ND	ND	ND	58.4	56.6	ND
	M16B	13.0	13.5	12.9	12.7	14.2	14.6	ND	ND	ND	ND	53.4	54.3	ND
Spec. Interest	M01S	12.1	13.3	12.2	10.6	13.2	13.3	ND	ND	ND	ND	51.7	49.3	ND
	M02S	11.5	12.7	12.4	11.7	13.7	12.9	ND	ND	ND	ND	49.7	50.7	ND
	M03S	13.6	15.3	13.9	13.3	15.7	14.8	ND	ND	ND	ND	59.4	57.7	ND
	M04S	14.3	15.8	13.8	13.7	15.6	14.4	ND	ND	ND	ND	61.7	57.5	ND
	M05S	14.1	15.3	13.6	13.7	18.7	14.9	ND	ND	ND	ND	60.1	60.9	ND
	M06S	15.9	16.9	14.8	14.2	16.6	13.9	ND	ND	ND	ND	66.6	59.4	ND
Control	M01C	14.0	14.8	13.2	12.2	14.0	13.3	ND	ND	ND	ND	58.4	52.7	ND
	M02C	14.0	15.6	12.2	12.1	13.1	12.8	ND	ND	ND	ND	60.9	50.3	ND
	M03C	15.3	16.3	13.1	12.9	14.8	14.0	ND	ND	ND	ND	64.3	54.8	ND
	M04C	14.1	14.8	12.1	12.4	14.0	12.8	ND	ND	ND	ND	58.7	51.3	ND

MDD_Q	4.7
MDD_A	11.2

* TLD was missing in the field.

MDD_Q and MDD_A were determined using ten years of REMP TLD Data from 2001 through 2010.

Attachment 4, MNGP Groundwater Supplemental Information

Table 20 MNGP Monitoring Well Locations

Well ID	Date Installed	Unique Number	Plant Data (ft)		UTM Zone 15, (m)		Surface Elevation (ft)	Top of Riser Elevation (ft)	Bottom of Well Elevation (ft)	Screen Interval Elev – Elev	Depth to Top of Screen (ft)	Depth to Bottom of Screen (ft)
			Easting	Northing	Easting	Northing						
MW-1	8/10/1994	547747	4847.19	10248.69	433407.38	5020424.14	930.4	930.19	902.4	902.4 - 912.4	18	28
MW-1B	1/26/2023	870184	4857.61	10247.41	433410.44	5020425.10	930.2	929.96	873.2	973.2 - 878.2	52	57
PW-1	2/21/2023	870167	5081.98	10055.39	433496.59	5020399.96	927.9	930.41	898.7	898.7 - 903.7	24	29
MW-2	8/10/1994	547748	4843.43	10326.78	433396.55	5020445.36	921.8	923.82	897.5	897.5 - 907.5	14	24
MW-3	8/10/1994	547749	4889.37	10319.18	433410.26	5020449.01	919.9	921.91	901.2	901.2 - 911.2	9	19
MW-4	10/8/2007	747055	5281.42	10320.84	433518.94	5020498.60	925.4	927.86	898.7	898.7 - 908.7	17	27
MW-4B	1/24/2023	870185	5289.29	10321.02	433521.10	5020499.64	925.8	928.26	877.8	877.8 - 882.8	43	48
MW-5	9/6/2007	747056	4549.88	9757.05	433386.42	5020250.34	943.0	942.75	901.7	901.7 - 911.7	31	41
MW-6	9/7/2007	747057	5035.29	9563.03	433545.55	5020257.29	930.7	933.24	899.9	899.9 - 909.9	21	31
MW-7	9/5/2007	747058	6205.26	9609.17	433864.70	5020416.73	920.0	922.49	898.1	898.1- 908.1	12	22
MW-8	9/5/2007	747059	5393.93	8251.55	433809.51	5019938.00	931.5	934.00	900.1	900.1 - 910.1	21	31
MW-9	9/4/2009	725274	5074.19	10064.31	433493.53	5020401.38	927.9	927.58	901.2	901.2 - 911.2	17	27
MW-9B	11/17/2009	772326	5075.65	10054.35	433495.19	5020398.80	927.9	927.75	883.5	883.5 - 888.5	39	44
PW-9	2/6/2023	870166	5074.80	10059.10	433494.36	5020400.01	927.9	928.08	892.4	892.4 - 897.4	31	36
PW-10A*	5/30/2023	725272	4885.31	10045.19	433443.47	5020372.40	934.9	936.36	895.9	895.9-910.9	24	39
MW-10B	12/29/2022	870161	4887.86	10037.95	433445.13	5020370.70	934.9	934.41	875.9	875.9 - 880.9	54	59
MW-11	9/2/2009	725273	4886.97	9931.96	433458.12	5020341.16	934.9	934.51	899.7	899.7 - 909.7	25	35
MW-12A	10/29/2009	772328	5191.46	10105.31	433520.96	5020427.47	932.4	932.14	898.7	898.7 - 908.7	24	34
MW-12B	11/2/2009	772329	5195.51	10106.27	433521.97	5020428.24	932.4	932.13	884.4	884.4 - 889.4	43	48
PW-13A*	5/31/2023	772330	5059.49	10210.49	433471.13	5020440.14	931.3	932.95	891.3	891.3-906.3	25	40
MW-13B	11/1/2009	772331	5062.00	10212.53	433471.57	5020441.02	931.2	933.71	873.4	873.4 - 878.4	56	61
MW-14	9/13/2010	778176	4829.02	10402.98	433383.00	5020464.72	908.7	912.42	902.1	902.1 - 905.1	4	7
MW-15A	6/25/2012	789990	5126.35	10352.88	433471.86	5020488.07	919.0	918.67	903.0	903.0 - 913.0	6	16
MW-15B	6/26/2012	789991	5131.93	10352.93	433473.40	5020488.78	919.1	918.79	869.5	869.5 - 874.5	45	50
MW-16A	12/28/2022	870162	5191.47	10214.97	433507.22	5020457.91	930.6	930.07	899.6	899.6 - 909.6	21	31
MW-16B	12/28/2022	870163	5188.29	10223.72	433505.24	5020459.96	930.7	930.34	877.7	877.7 - 882.7	48	53
PW-16A	2/20/2023	870218	5188.48	10213.12	433506.63	5020457.04	930.5	932.85	892.5	892.5 - 902.5	28	38
MW-17A	12/21/2022	870164	5146.25	9802.99	433546.33	5020337.79	933.6	935.37	900.6	900.6 - 910.6	23	33
MW-17B	12/20/2022	870165	5141.41	9803.31	433544.90	5020337.36	933.5	934.90	858.5	858.5 - 863.5	70	75
MW-19A	1/11/2023	870186	5368.46	10141.08	433565.64	5020459.58	930.5	930.31	900.5	900.5 - 910.5	20	30
MW-19B	1/11/2023	870187	5378.46	10141.03	433568.42	5020460.82	930.5	930.24	880.5	880.5 - 885.5	45	50
MW-20A	1/27/2023	870188	5561.85	10201.21	433611.82	5020500.52	921.7	923.36	897.7	897.7 - 907.7	14	24
MW-21A	1/27/2023	870189	5701.37	9721.49	433710.68	5020384.77	923.6	926.28	897.6	897.6 - 907.6	16	26
PW-22A	1/25/2023	870190	5223.69	10132.39	433526.52	5020439.03	931.6	933.47	892.6	892.6 - 902.6	29	39
MW-23A	3/17/2023	870250	5225.01	10332.11	433501.86	5020494.66	921.6	923.25	898.6	898.6 - 908.6	13	23
MW-23B	3/17/2023	870251	5225.56	10338.94	433501.16	5020496.63	921.3	923.86	876.3	876.3 - 881.3	40	45
MW-24A	6/8/2023	872351	4804.67	10025.59	433423.53	5020356.85	934.8	936.54	901.8	901.8 - 911.8	23	33
MW-26A	6/15/2023	872374	5150.93	10419.40	433470.35	5020509.62	917.5	919.27	899.5	899.5-909.5	8	18
MW-26B	6/15/2023	872375	5160.96	10420.68	433472.97	5020511.23	917.4	919.56	869.4	869.4-874.4	43	48
MW-27A	6/15/2023	872372	5253.84	10424.64	433498.27	5020523.97	917.5	919.78	899.5	899.5-909.5	8	18
MW-27B	6/15/2023	872373	5262.43	10424.86	433500.63	5020525.11	917.6	919.91	871.6	871.6-876.6	41	46
MW-28A	7/5/2023	872321	5324.84	10423.67	433518.11	5020532.60	918.4	920.51	898.4	898.4-908.4	10	20
MW-28B	7/5/2023	872322	5332.78	10423.44	433520.34	5020533.53	918.8	920.64	878.8	878.8-883.8	35	40
MW-29A	6/30/2023	872323	5391.03	10387.72	433541.00	5020530.91	920.6	922.79	898.6	898.6-908.6	13	23
MW-29B	6/29/2023	872324	5398.64	10384.23	433543.55	5020530.90	920.6	922.73	877.6	877.6-882.6	38	43
MW-30A	7/6/2023	872325	5465.99	10360.20	433565.27	5020532.66	920.0	921.33	899.0	899.0-909.0	11	21
MW-30B	7/6/2023	872326	5473.21	10357.95	433567.55	5020532.94	919.9	921.78	880.9	880.9-885.9	34	39
MW-31A	7/6/2023	872328	5320.18	10236.12	433540.32	5020479.93	929.0	930.86	894.0	894.0-909.0	20	35
MW-31B	7/6/2023	872327	5328.12	10236.47	433542.48	5020481.02	928.8	930.63	878.8	878.8-883.8	45	50
MW-33A	7/19/2023	872414	5456.44	10424.99	433554.49	5020549.46	919.0	920.87	897.0	897.0-907.0	12	22
MW-33B	7/18/2023	872415	5464.23	10422.71	433556.94	5020549.80	919.1	920.39	879.1	879.1-884.1	35	40
MW-37A	7/21/2023	872416	5562.59	10450.69	433580.75	5020569.90	913.0	914.96	896.0	896.0-906.0	7	17
MW-37B	7/21/2023	872417	5571.69	10450.91	433583.26	5020571.10	913.9	916.20	875.9	875.9-880.9	33	38

*Monitoring Wells MW-10 and MW-13A have been over-drilled and converted into Pumping Wells PW-10A and PW-13A Respectively.

Table 20 (cont.)

Well ID	Date Installed	Unique Number	Plant Data (ft)		UTM Zone 15, (m)		Surface Elevation (ft)	Top of Riser Elevation (ft)	Bottom of Well Elevation (ft)	Screen Interval Elev – Elev	Depth to Top of Screen (ft)	Depth to Bottom of Screen (ft)
			Easting	Northing	Easting	Northing						
MW-48A	7/26/2023	872437	5711.40	10444.22	433622.90	5020586.75	919.6	921.62	897.6	897.6-907.6	12	22
MW-48B	7/26/2023	872438	5703.61	10444.65	433620.68	5020585.90	920.8	922.59	868.8	868.8-873.8	47	52
MW-50A	7/24/2023	872439	5700.59	10313.03	433636.33	5020548.96	919.4	921.70	897.4	897.4-907.4	12	22
MW-58A	7/25/2023	872440	5836.28	10432.11	433659.10	5020599.04	920.1	922.87	899.1	899.1-909.1	11	21
MW-66A	10/11/2023	880250	5732.81	9949.96	433690.78	5020452.16	919.5	920.89	891.5	891.5-901.5	18	28
MW-67A	10/12/2023	880251	5435.28	9970.07	433605.63	5020420.47	930.6	932.47	895.6	895.6-905.6	25	35
MW-67B	10/12/2023	880252	5443.78	9969.50	433608.06	5020421.37	930.6	932.83	875.6	875.6-880.6	50	55
MW-68A	10/11/2023	880253	4870.85	9585.16	433497.11	5020242.83	936.8	936.80	902.8	902.8-912.8	24	34
MW-101*	7/27/2023	872427	6222.89	7498.06	434134.17	5019832.62	928.2	929.85	901.2	901.2-911.2	17	27
MW-101R	10/18/2024	885501	6216.72	7670.02	434110.90	5019879.60	926.1	928.15	901.1	901.1-911.1	15	25
MW-102	7/28/2023	872428	6713.15	7546.16	434264.30	5019907.42	926.4	928.59	989.4	989.4-999.4	18	28
MW-103	7/28/2023	872429	6606.53	7219.23	434275.66	5019803.26	935.2	937.55	903.3	903.3-913.3	22	32
MW-104	10/10/2024	885502	5803.15	7592.18	434005.80	5019806.16	929.9	932.40	901.9	901.9-911.9	18	28
MW-105	10/18/2024	885503	5899.16	7038.11	434101.90	5019664.31	927.0	929.07	908.00	908.0-918.0	9	19

*MW-101 was sealed during this reporting period and replaced with MW-101R

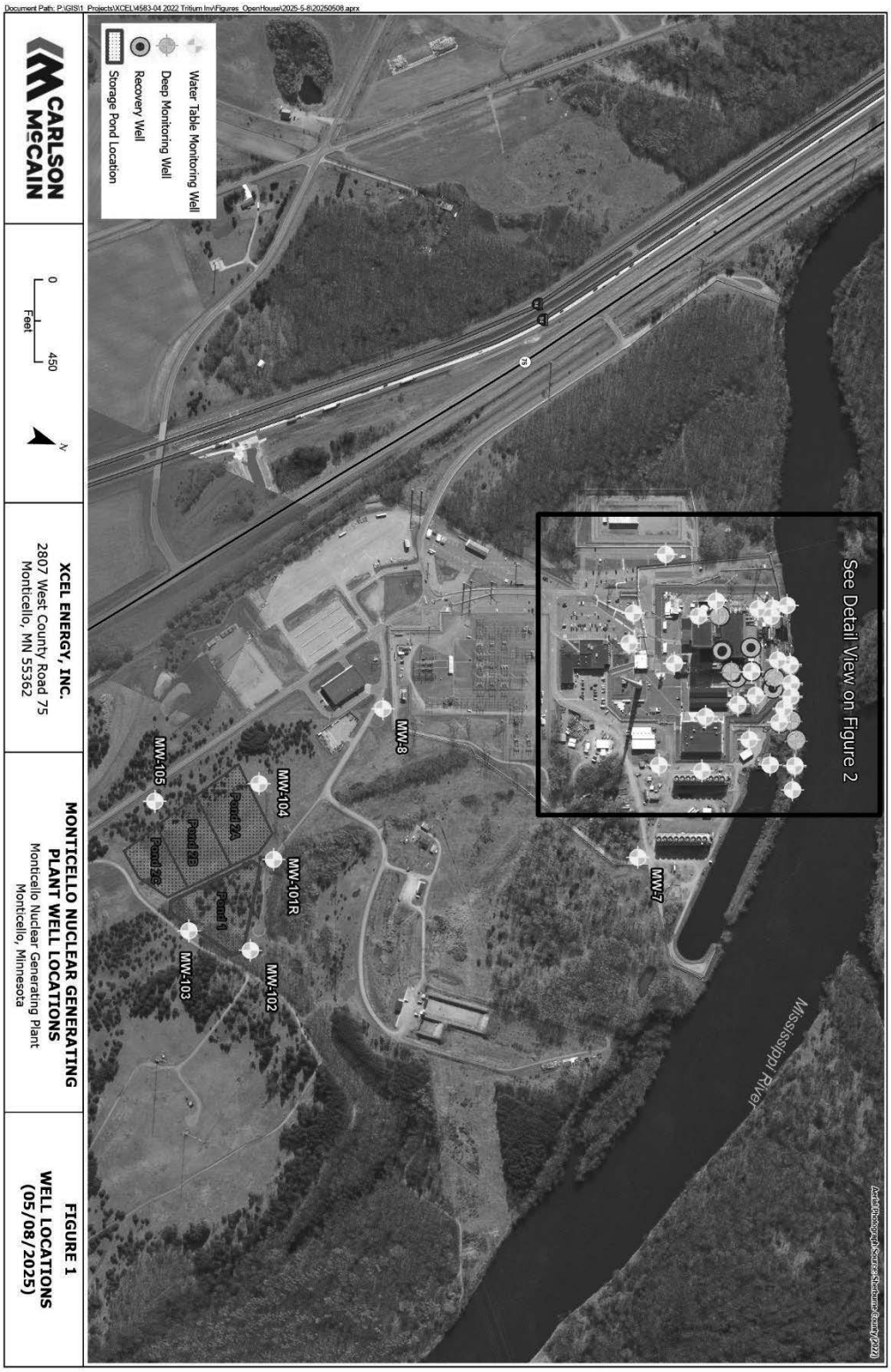

Figure 5, Monticello Nuclear Generating Plant Well Locations

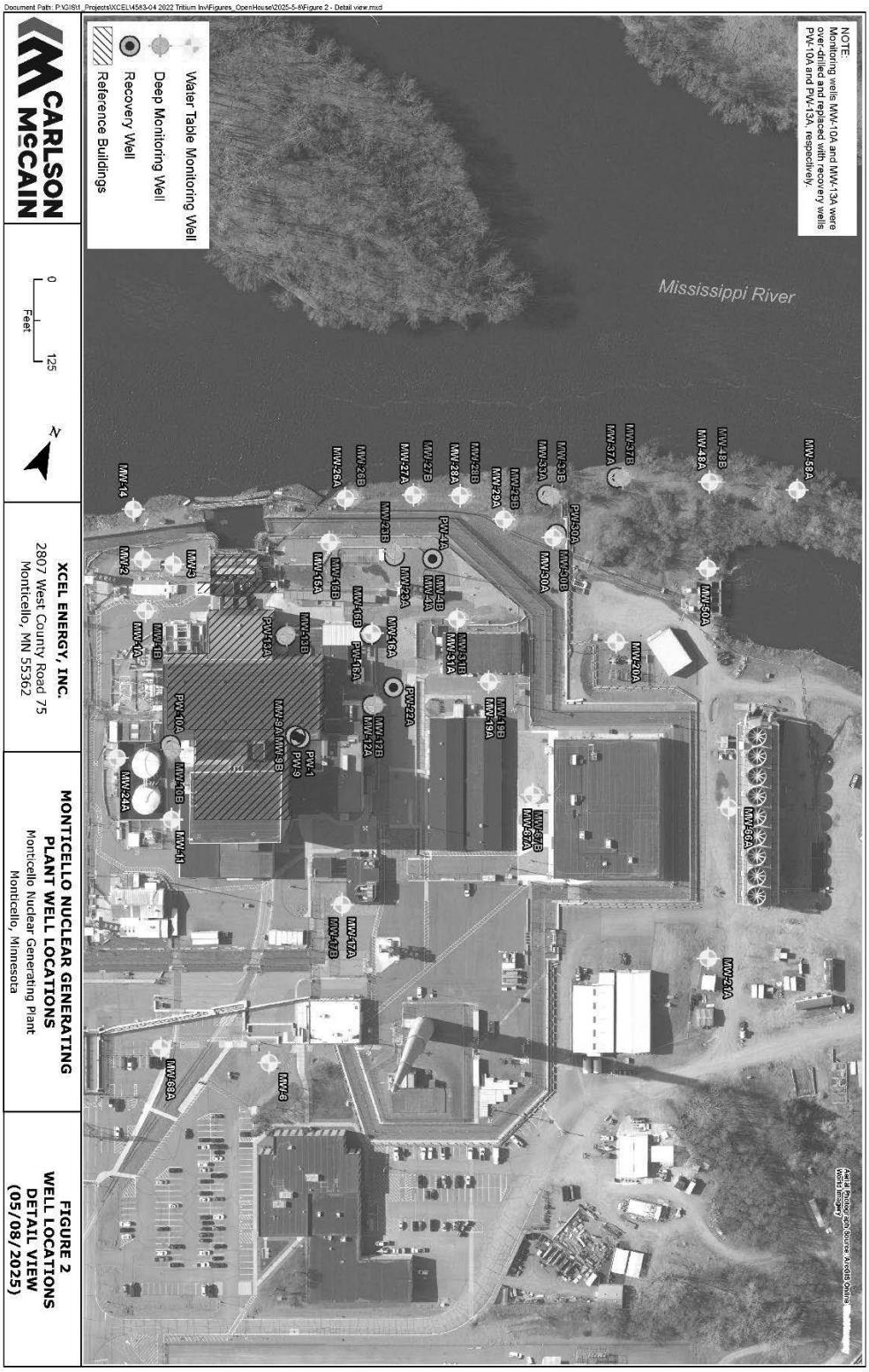

Figure 6, Monticello Nuclear Generating Plant Well Locations – Detailed View

Attachment 5, Groundwater Monitoring Program Results

		Concentration (pCi/L)										
Lab ID	Collect Date	^{3}H	^{54}Mn	^{58}Co	^{59}Fe	^{60}Co	^{65}Zn	^{95}Zr	^{95}Nb	^{134}Cs	^{137}Cs	^{140}Ba-^{140}La
			Monitoring Well 1 (MW-1)									
660388001	3/19/2024	< 189	< 2.62	< 1.46	< 5.45	< 2.38	< 4.28	< 4.26	< 3.00	< 2.87	< 1.48	< 13.0
669533001	5/21/2024	< 208	< 1.60	< 1.00	< 3.38	< 1.64	< 2.85	< 2.84	< 1.52	< 1.80	< 0.93	< 11.3
682621001	8/18/2024	221 ± 134	< 1.62	< 1.18	< 3.03	< 1.59	< 2.55	< 2.99	< 1.61	< 1.86	< 1.61	< 10.9
692851001	10/22/2024	< 226	< 1.44	< 0.97	< 2.98	< 1.62	< 3.14	< 2.24	< 1.62	< 1.50	< 0.81	< 8.68
			Monitoring Well 1B (MW-1B)									
660388002	3/19/2024	< 198	< 2.03	< 1.48	< 5.31	< 2.52	< 5.44	< 4.03	< 1.51	< 2.29	< 2.54	< 11.6
669533002	5/21/2024	< 203	< 1.61	< 1.00	< 4.30	< 1.58	< 3.92	< 3.31	< 1.20	< 1.69	< 1.73	< 11.5
692851002	10/22/2024	< 232	< 1.41	< 1.01	< 2.71	< 1.51	< 2.94	< 2.75	< 2.01	< 1.73	< 1.58	< 9.52
			Monitoring Well 2 (MW-2)									
660388003	3/19/2024	< 198	< 1.60	< 1.59	< 3.38	< 1.55	< 2.81	< 2.98	< 1.86	< 1.59	< 0.99	< 8.40
669533003	5/21/2024	< 206	< 1.68	< 1.69	< 4.12	< 1.95	< 3.79	< 3.25	< 1.98	< 1.79	< 1.38	< 11.8
682621002	8/18/2024	< 200	< 1.30	< 1.23	< 2.94	< 1.19	< 2.84	< 2.56	< 1.30	< 1.34	< 0.78	< 7.61
692851003	10/22/2024	< 219	< 1.28	< 1.30	< 2.90	< 1.12	< 2.75	< 2.25	< 1.53	< 1.45	< 0.87	< 7.49
			Monitoring Well 3 (MW-3)									
660388004	3/19/2024	< 194	< 1.91	< 2.21	< 4.01	< 2.12	< 3.49	< 3.23	< 2.09	< 2.20	1.29	< 11.9
669533004	5/21/2024	< 204	< 1.74	< 2.13	< 4.23	< 2.69	< 3.93	< 3.73	< 2.17	< 2.06	1.25	< 14.2
682621003	8/18/2024	< 201	< 1.63	< 1.95	< 4.27	< 1.91	< 3.86	< 2.89	< 2.13	< 1.90	1.49	< 11.4
692851004	10/22/2024	< 231	< 1.24	< 1.34	< 2.87	< 1.42	< 2.86	< 2.58	< 1.55	< 1.38	1.22	< 7.63
			Monitoring Well 4 (MW-4)									
654385001	1/26/2024	1870 ± 222										
657449001	2/22/2024	666 ± 196										
661574001	3/20/2024	884 ± 183	< 1.16	< 1.29	< 2.55	< 1.53	< 2.61	< 2.69	< 1.39	< 1.36	< 0.73	< 11.3
666367001	4/23/2024	< 279										
669533005	5/23/2024	< 201	< 1.49	< 1.48	< 3.26	< 1.48	< 3.19	< 2.56	< 1.51	< 1.60	< 0.97	< 9.18
672813001	6/18/2024	977 ± 217										
682520002	7/23/2024	1860 ± 294										
683597001	8/18/2024	339 ± 155	< 1.53	< 1.73	< 3.85	< 1.87	< 3.68	< 3.20	< 2.03	< 1.73	< 1.07	< 15.9
687144013	9/17/2024	1860 ± 332										
694939001	10/22/2024	775 ± 181										
699368013	11/19/2024	4810 ± 485	< 1.51	< 1.55	< 3.42	< 1.88	< 3.04	< 2.97	< 1.73	< 1.49	< 0.94	< 15.9
703369014	12/17/2024	7180 ± 376										
			Monitoring Well 4B (MW-4B)									
660388005	3/19/2024	3680 ± 394	< 1.58	< 1.77	< 3.86	< 1.64	< 3.45	< 3.19	< 1.96	< 2.01	< 1.15	< 9.15
669533006	5/23/2024	< 205	< 1.43	< 1.52	< 3.37	< 1.59	< 3.51	< 2.84	< 1.75	< 1.68	< 1.18	< 11.3
682520003	7/23/2024	24900 ± 1110										
687144014	9/17/2024	11100 ± 663										
694939002	10/22/2024	7630 ± 414	< 1.67	< 1.72	< 4.26	< 1.68	< 3.55	< 3.31	< 2.01	< 1.81	< 0.99	< 17.1
699368014	11/21/2024	13100 ± 774										
703369015	12/17/2024	6590 ± 358										

Lab ID	Collect Date	^{3}H	^{54}Mn	^{58}Co	^{59}Fe	^{60}Co	^{65}Zn	^{95}Zr	^{95}Nb	^{134}Cs	^{137}Cs	^{140}Ba-^{140}La
			Monitoring Well 5 (MW-5)									
682621004	8/20/2024	245 ± 136	< 1.04	< 1.32	< 2.77	< 1.46	< 2.88	< 2.37	< 1.42	< 1.31	0.775	< 7.54
			Monitoring Well 6 (MW-6)									
682621005	8/20/2024	< 202	< 1.31	< 1.25	< 2.82	< 1.41	< 2.64	< 2.34	< 1.38	< 1.43	0.755	< 7.90
			Monitoring Well 7 (MW-7)									
682621006	8/20/2024	< 200	< 2.54	< 2.40	< 4.68	< 2.37	< 5.03	< 5.26	< 1.60	< 2.63	1.47	< 14.7
			Monitoring Well 8 (MW-8)									
682621007	8/20/2024	< 198	< 1.70	< 1.76	< 3.86	< 1.85	< 3.67	< 2.83	< 0.99	< 1.91	1.06	< 10.5
			Monitoring Well 9 (MW-9)									
654385002	1/23/2024	288000 ± 2290										
654385003	1/23/2024	291000 ± 2300*										
657449002	2/21/2024	178000 ± 2650										
661574002	3/19/2024	80100 ± 1230	< 1.13	< 1.26	< 2.56	< 1.24	< 2.45	< 2.31	< 1.48	< 1.25	< 0.68	< 10.5
666367002	4/23/2024	49800 ± 1080										
671041001	5/21/2024	228000 ± 2240	< 0.96	< 1.05	< 2.73	< 1.13	< 2.45	< 2.12	< 0.76	< 1.20	< 0.62	< 11.8
673885001	6/18/2024	88100 ± 1400										
682521001	7/23/2024	62400 ± 1750										
683597002	8/18/2024	45200 ± 1020	< 1.62	< 2.02	< 4.22	< 2.12	< 3.71	< 3.33	< 1.28	< 1.87	< 1.15	< 18.2
687144001	9/17/2024	71600 ± 1660										
694939003	10/22/2024	45600 ± 958	< 1.50	< 1.95	< 4.36	< 1.84	< 3.47	< 3.23	< 1.13	< 1.67	< 1.06	< 17.6
699368007	11/19/2024	17100 ± 719										
703369007	12/16/2024	18000 ± 693										
			Monitoring Well 9B (MW-9B)									
654385004	1/23/2024	4290 ± 205										
657449003	2/21/2024	2640 ± 349										
661574003	3/19/2024	1410 ± 209	< 1.21	< 1.30	< 3.06	< 1.33	< 2.43	< 2.36	< 0.80	< 1.26	< 1.97	< 11.7
666367003	4/23/2024	2250 ± 286										
671041002	5/21/2024	2690 ± 282	< 2.03	< 2.09	< 5.27	< 1.94	< 4.15	< 4.11	< 1.40	< 2.35	< 1.19	< 21.7
673885002	6/18/2024	4610 ± 353										
682521002	7/23/2024	1490 ± 291										
683597003	8/18/2024	828 ± 201	< 1.47	< 1.80	< 4.01	< 1.85	< 3.58	< 3.47	< 1.08	< 1.80	< 1.00	< 16.5
687144002	9/17/2024	3150 ± 363										
694939004	10/22/2024	6990 ± 395	< 1.39	< 1.76	< 3.93	< 1.47	< 3.21	< 3.01	< 1.00	< 1.55	< 0.83	< 16.8
699368008	11/19/2024	1160 ± 205										
703369008	12/16/2024	1480 ± 245										

Lab ID	Collect Date	^{3}H	^{54}Mn	^{58}Co	^{59}Fe	^{60}Co	^{65}Zn	^{95}Zr	^{95}Nb	^{134}Cs	^{137}Cs	^{140}Ba-^{140}La
			Monitoring Well 10 (MW-10) Pumping Well 10A (PW-10A)									
654385005	1/26/2024	2970 ± 262										
657449004	2/21/2024	2920 ± 357										
661574004	3/20/2024	1790 ± 225	< 1.12	< 1.35	< 2.84	< 1.12	< 2.34	< 2.10	< 1.40	< 1.29	1.27	< 10.6
666367004	4/23/2024	1960 ± 270										
671041003	5/22/2024	1460 ± 224	< 1.50	< 1.54	< 3.42	< 1.41	< 2.69	< 3.01	< 1.61	< 1.50	1.47	< 14.0
673885003	6/18/2024	802 ± 197										
682521003	7/23/2024	713 ± 227										
683597004	8/19/2024	1480 ± 206	< 1.41	< 1.66	< 3.23	< 1.41	< 2.84	< 2.79	< 0.96	< 1.39	2.24	< 13.5
687144003	9/17/2024	389 ± 153										
694939005	10/22/2024	986 ± 189	< 1.24	< 1.41	< 3.44	< 1.27	< 2.83	< 2.45	< 1.46	< 1.28	1.33	< 15.3
699368009	11/20/2024	609 ± 158										
705187003	12/17/2024	588 ± 154										
			Monitoring Well 10B (MW-10B)									
660388006	3/19/2024	222 ± 148	< 1.32	< 1.01	< 3.40	< 1.56	< 3.42	< 2.82	< 1.10	< 1.73	< 1.79	< 9.80
669533007	5/22/2024	< 206	< 1.99	< 1.29	< 4.48	< 1.88	< 3.81	< 3.71	< 1.23	< 2.37	< 2.03	< 12.6
694939006	10/22/2024	< 222	< 1.35	< 0.98	< 3.22	< 1.32	< 2.49	< 2.86	< 0.98	< 1.42	< 1.35	< 17.6
			Monitoring Well 11 (MW-11)									
660388007	3/19/2024	< 193	< 2.43	< 1.65	< 4.83	< 2.47	< 5.08	< 4.81	< 2.75	< 2.90	< 2.20	< 14.4
669533008	5/22/2024	< 206	< 1.86	< 1.06	< 3.85	< 1.94	< 3.44	< 3.28	< 1.80	< 1.66	< 1.72	< 12.1
682621008	8/19/2024	204 ± 133	< 1.66	< 1.03	< 3.74	< 1.76	< 3.65	< 3.06	< 1.87	< 1.82	< 1.90	< 12.0
692851005	10/22/2024	< 224	< 1.20	< 0.74	< 2.50	< 1.35	< 2.81	< 2.16	< 1.31	< 1.32	< 1.27	< 7.10
			Monitoring Well 12A (MW-12A)									
654385006	1/26/2024	566 ± 158										
657449005	2/21/2024	917 ± 218										
661574005	3/21/2024	736 ± 176	< 1.26	< 0.92	< 3.49	< 1.55	< 2.94	< 2.85	< 1.68	< 1.42	< 1.46	< 12.1
666367005	4/23/2024	710 ± 209										
671041004	5/24/2024	666 ± 186	< 1.33	< 0.87	< 2.87	< 1.26	< 2.50	< 2.66	< 1.43	< 1.47	< 1.29	< 12.4
673885004	6/18/2024	948 ± 206										
682521004	7/23/2024	718 ± 223										
683597005	8/19/2024	719 ± 210	< 1.80	< 1.12	< 4.34	< 2.57	< 3.39	< 3.47	< 1.96	< 1.42	< 1.69	< 16.2
687144004	9/17/2024	1180 ± 238										
694939007	10/23/2024	473 ± 166	< 2.11	< 1.52	< 5.40	< 1.80	< 4.26	< 4.74	< 2.61	< 1.79	< 2.21	< 26.1
699368010	11/19/2024	666 ± 168										
703369010	12/17/2024	717 ± 195										

Lab ID	Collect Date	^{3}H	^{54}Mn	^{58}Co	^{59}Fe	^{60}Co	^{65}Zn	^{95}Zr	^{95}Nb	^{134}Cs	^{137}Cs	^{140}Ba-^{140}La
			Monitoring Well 12B (MW-12B)									
654385007	1/29/2024	33000 ± 784										
657449006	2/21/2024	30400 ± 1110										
661574006	3/21/2024	25800 ± 717	< 1.00	< 0.63	< 2.56	< 1.25	< 2.37	< 2.27	< 1.24	< 1.13	< 1.13	< 9.60
666367006	4/23/2024	22500 ± 748										
671041005	5/24/2024	25300 ± 753	< 1.07	< 0.79	< 2.67	< 1.13	< 2.27	< 2.29	< 1.37	< 1.21	< 1.16	< 10.5
673885005	6/18/2024	21400 ± 690										
682521005	7/23/2024	12200 ± 759										
683597007	8/19/2024	9010 ± 491	< 1.17	< 0.72	< 2.90	< 1.19	< 2.48	< 2.31	< 1.38	< 1.26	< 1.24	< 13.5
687144005	9/17/2024	4270 ± 415										
694939008	10/23/2024	2430 ± 252	< 1.65	< 1.09	< 4.36	< 1.49	< 3.12	< 3.43	< 2.11	< 1.66	< 1.67	< 18.7
699368011	11/19/2024	2030 ± 322										
703369011	12/17/2024	1860 ± 215										
			Monitoring Well 13A (MW-13A) Pumping Well 13A (PW-13A)									
654385008	1/26/2024	46400 ± 925										
657449007	2/22/2024	39000 ± 1220										
661574007	3/20/2024	41300 ± 905	< 1.50	< 0.88	< 3.39	< 1.50	< 3.06	< 2.76	< 1.56	< 1.60	< 1.49	< 13.6
666367007	4/23/2024	42800 ± 988										
671041006	5/23/2024	43800 ± 990	< 1.12	< 0.76	< 2.87	< 1.13	< 2.40	< 2.37	< 1.22	< 1.29	< 1.29	< 11.8
687144008	9/17/2024	38000 ± 1250										
694939009	10/22/2024	17400 ± 608	< 1.15	< 0.86	< 2.78	< 1.09	< 2.37	< 2.34	< 1.46	< 1.21	< 1.12	< 14.8
699368002	11/21/2024	14600 ± 660										
703369002	12/17/2024	12600 ± 587										
			Monitoring Well 13B (MW-13B)									
657449008	2/22/2024	680 ± 191										
661574008	3/20/2024	3850 ± 297	< 1.37	< 0.89	< 1.70	< 1.27	< 2.54	< 2.60	< 1.44	< 1.41	< 1.28	< 12.4
666367008	4/23/2024	8110 ± 459										
671041007	5/23/2024	9790 ± 483	< 1.09	< 0.72	< 1.68	< 1.17	< 2.30	< 2.12	< 1.39	< 1.25	< 1.16	< 11.0
673885006	6/18/2024	8220 ± 428										
682521006	7/23/2024	6310 ± 562										
683597008	8/19/2024	28600 ± 825	< 1.05	< 0.76	< 1.75	< 0.96	< 2.07	< 2.15	< 1.29	< 1.31	< 1.09	< 11.3
687144006	9/17/2024	28300 ± 1080										
694939010	10/22/2024	34600 ± 830	< 1.10	< 0.75	< 1.63	< 1.14	< 2.40	< 2.12	< 1.31	< 1.21	< 1.03	< 13.8
699368012	11/19/2024	45600 ± 1420										
703369012	12/17/2024	49900 ± 940										
			Monitoring Well 14 (MW-14)									
660388008	3/18/2024	< 197	< 1.69	< 1.06	< 1.61	< 1.64	< 3.29	< 2.82	< 1.67	< 1.52	< 1.57	< 8.28
669533009	5/21/2024	< 206	< 1.33	< 1.06	< 1.91	< 1.60	< 3.10	< 3.14	< 1.67	< 1.66	< 1.59	< 12.8
682621009	8/18/2024	< 201	< 1.62	< 0.94	< 1.84	< 1.70	< 3.36	< 3.14	< 1.79	< 1.56	< 1.62	< 11.1
692851012	10/23/2024	< 227	< 1.18	< 0.79	< 2.49	< 1.34	< 2.19	< 2.35	< 1.50	< 1.28	< 1.36	< 7.32

Lab ID	Collect Date	^{3}H	^{54}Mn	^{58}Co	^{59}Fe	^{60}Co	^{65}Zn	^{95}Zr	^{95}Nb	^{134}Cs	^{137}Cs	^{140}Ba-^{140}La
			Monitoring Well 15A (MW-15A)									
654369001	1/26/2024	24700 ± 684										
657446001	2/22/2024	14900 ± 775										
661574009	3/20/2024	9330 ± 438	< 1.63	< 0.99	< 2.18	< 1.66	< 3.29	< 3.55	< 1.82	< 1.60	< 1.59	< 14.6
666367009	4/23/2024	3160 ± 315										
671041008	5/23/2024	4350 ± 341	< 1.37	< 0.94	< 2.23	< 1.97	< 3.33	< 2.98	< 1.52	< 1.52	< 1.43	< 14.7
673885007	6/18/2024	7560 ± 423										
682519001	7/23/2024	2040 ± 328										
683597009	8/18/2024	520 ± 193	< 1.47	< 1.43	< 2.23	< 1.49	< 2.84	< 2.41	< 1.68	< 1.72	< 1.49	< 14.3
687144007	9/17/2024	< 148										
694939011	10/22/2024	1890 ± 260	< 1.02	< 0.80	< 1.79	< 1.17	< 2.57	< 2.51	< 1.50	< 1.23	< 1.23	< 14.4
699368001	11/19/2024	9500 ± 538										
703369001	12/17/2024	6790 ± 429										
			Monitoring Well 15B (MW-15B)									
660388009	3/19/2024	< 200	< 1.62	< 1.04	< 3.25	< 1.77	< 3.07	< 2.89	< 1.46	< 1.56	< 1.53	< 9.43
671041009	5/23/2024	350 ± 167	< 1.85	< 1.16	< 4.48	< 1.81	< 3.36	< 3.35	< 2.16	< 1.84	< 1.84	< 15.3
673885008	6/18/2024	1780 ± 245										
682519002	7/23/2024	1410 ± 288										
683597010	8/18/2024	1080 ± 208	< 1.38	< 0.91	< 3.57	< 1.52	< 3.05	< 2.56	< 1.68	< 1.54	< 1.38	< 16.0
694939012	10/22/2024	702 ± 191	< 1.47	< 0.96	< 3.67	< 1.80	< 3.08	< 3.07	< 1.66	< 1.69	< 1.54	< 18.5
			Monitoring Well 16A (MW-16A)									
654369002	1/26/2024	171000 ± 1760										
657446002	2/21/2024	111000 ± 2120										
661574010	3/20/2024	86900 ± 1300	< 1.35	< 0.97	< 3.27	< 1.50	< 1.86	< 2.75	< 1.67	< 1.60	< 1.55	< 15.1
666367010	4/23/2024	69900 ± 1980										
671041010	5/23/2024	15000 ± 593	< 1.35	< 0.94	< 2.96	< 1.32	< 5.17	< 2.66	< 1.55	< 1.40	< 1.40	< 14.9
673885009	6/18/2024	4400 ± 338										
682519003	7/23/2024	25000 ± 1110										
683597011	8/19/2024	15500 ± 583	< 1.18	< 0.81	< 3.42	< 1.34	< 2.40	< 2.60	< 1.44	< 1.42	< 1.29	< 11.9
687144009	9/17/2024	3720 ± 406										
694939013	10/22/2024	2030 ± 260	< 1.26	< 0.89	< 3.80	< 1.22	< 1.69	< 2.87	< 1.53	< 1.40	< 1.22	< 17.6
699368003	11/19/2024	6880 ± 438										
703369003	12/17/2024	10000 ± 526										

Lab ID	Collect Date	^{3}H	^{54}Mn	^{58}Co	^{59}Fe	^{60}Co	^{65}Zn	^{95}Zr	^{95}Nb	^{134}Cs	^{137}Cs	^{140}Ba-^{140}La
			Monitoring Well 16B (MW-16B)									
657446003	2/21/2024	2830 ± 352										
661574011	3/20/2024	3230 ± 281	< 1.37	< 0.94	< 2.80	< 1.25	< 1.40	< 2.62	< 1.64	< 1.47	< 1.34	< 13.2
666367011	4/23/2024	3060 ± 421										
671041011	5/23/2024	2700 ± 269	< 0.98	< 0.77	< 2.74	< 1.32	< 1.35	< 2.21	< 1.29	< 1.20	< 1.05	< 12.4
673885010	6/18/2024	2110 ± 254										
682519004	7/23/2024	2080 ± 318										
683597012	8/19/2024	4330 ± 361	< 1.36	< 1.86	< 4.13	< 1.69	< 2.18	< 2.91	< 1.91	< 1.83	< 1.53	< 14.6
687144010	9/17/2024	2880 ± 348										
694939014	10/22/2024	2970 ± 311	< 1.61	< 1.06	< 4.14	< 1.92	< 2.12	< 3.41	< 1.90	< 1.69	< 1.64	< 21.0
699368004	11/19/2024	1740 ± 239										
703369004	12/17/2024	1590 ± 252										
			Monitoring Well 17A (MW-17A)									
694939015	10/22/2024	731 ± 166	< 1.08	< 0.85	< 2.90	< 1.20	< 1.42	< 2.25	< 1.25	< 1.20	< 1.15	< 14.4
			Monitoring Well 23A (MW-23A)									
671041012	5/24/2024	997 ± 196	< 1.03	< 0.76	< 2.95	< 1.41	< 1.63	< 2.55	< 1.28	< 1.34	< 1.13	< 11.5
703369013	12/17/2024	20500 ± 609										
			Monitoring Well 23B (MW-23B)									
671041013	5/24/2024	303 ± 149	< 1.10	< 0.77	< 2.60	< 1.03	< 1.63	< 2.21	< 1.29	< 1.16	< 0.996	< 11.7
682520004	7/23/2024	553 ± 199										
683597013	8/19/2024	< 284	< 1.05	< 0.78	< 3.07	< 1.16	< 1.38	< 2.20	< 1.28	< 1.22	< 1.09	< 11.6
687144015	9/17/2024	< 164										
			Monitoring Well 24 (MW-24)									
660388010	3/19/2024	< 192	< 1.49	< 0.95	< 3.23	< 1.71	< 2.16	< 2.92	< 1.83	< 1.67	< 1.82	< 10.2
669533010	5/22/2024	< 201	< 2.07	< 1.52	< 4.92	< 2.78	< 2.86	< 3.89	< 2.20	< 2.31	< 2.34	< 14.1
692851006	10/22/2024	< 218	< 1.62	< 1.03	< 3.69	< 1.78	< 2.23	< 3.13	< 1.84	< 1.80	< 1.85	< 10.6
			Monitoring Well 29A (MW-29A)									
654369003	1/26/2024	658 ± 164										
657446004	2/22/2024	528 ± 178										
661574012	3/22/2024	526 ± 173	< 1.03	< 0.734	< 2.58	< 1.29	< 1.43	< 2.39	< 1.11	< 1.17	< 1.19	< 9.81

Lab ID	Collect Date	^{3}H	^{54}Mn	^{58}Co	^{59}Fe	^{60}Co	^{65}Zn	^{95}Zr	^{95}Nb	^{134}Cs	^{137}Cs	^{140}Ba-^{140}La
			Monitoring Well 30A (MW-30A)									
654369004	1/26/2024	2230 ± 235										
657446005	2/22/2024	1440 ± 270										
661574013	3/22/2024	1660 ± 235	< 1.11	< 0.71	< 2.58	< 1.05	< 2.51	< 2.31	< 1.37	< 1.22	< 1.26	< 9.79
666367012	4/23/2024	1380 ± 304										
671041014	5/22/2024	993 ± 186	< 1.06	< 0.75	< 2.74	< 1.13	< 2.57	< 2.21		< 1.12	< 1.12	< 12.7
673885011	6/18/2024	1270 ± 217										
682519005	7/23/2024	213 ± 150										
683597014	8/20/2024	354 ± 187	< 2.23	< 1.37	< 4.79	< 2.16	< 4.51	< 4.20	< 2.61	< 2.32	< 2.26	< 19.3
687144011	9/17/2024	1300 ± 253										
694939016	10/23/2024	2470 ± 240	< 1.36	< 0.99	< 3.18	< 1.17	< 2.51	< 2.91	< 1.57	< 1.61	< 1.36	< 18.1
699368005	11/20/2024	1500 ± 221										
703369005	12/17/2024	864 ± 207										
			Monitoring Well 31A (MW-31A)									
699368015	11/19/2024	393 ± 182										
703369016	12/17/2024	485 ± 150										
			Monitoring Well 33A (MW-33A)									
654369005	1/26/2024	1540 ± 207										
657446006	2/22/2024	1690 ± 283										
661574014	3/22/2024	810 ± 191	< 1.06	< 0.70	< 2.70	< 1.22	< 2.30	< 2.05	< 1.39	< 1.18	< 1.13	< 9.96
666367013	4/23/2024	< 188										
671041015	5/22/2024	< 211	< 1.05	< 0.80	< 2.88	< 0.94	< 2.20	< 2.42	< 1.29	< 1.27	< 1.12	< 12.2
673885012	6/18/2024	< 244										
682519006	7/23/2024	199 ± 149										
694939017	10/23/2024	300 ± 161	< 1.40	< 1.01	< 3.36	< 1.42	< 3.01	< 2.86	< 1.71	< 1.60	< 1.48	< 19.3
699368016	11/20/2024	1870 ± 312										
703369017	12/17/2024	1420 ± 194										
			Monitoring Well 37A (MW-37A)									
657446007	2/22/2024	3100 ± 363										
661574015	3/22/2024	3470 ± 305	< 1.11	< 0.69	< 2.58	< 1.14	< 2.39	< 2.24	< 1.31	< 1.29	< 1.10	< 9.84
666367014	4/23/2024	2710 ± 396										
671041016	5/22/2024	1060 ± 186	< 1.13	< 1.62	< 3.37	< 1.23	< 2.67	< 2.55	< 1.44	< 1.18	< 1.11	< 13.5
673885013	6/18/2024	2690 ± 279										
682520001	7/23/2024	1940 ± 325										
683597015	8/20/2024	2440 ± 279	< 1.41	< 1.01	< 3.31	< 1.44	< 2.95	< 2.79	< 1.54	< 1.53	< 1.40	< 13.2
687144012	9/17/2024	1020 ± 228										
694939018	10/23/2024	3520 ± 327	< 1.65	< 1.20	< 4.15	< 1.78	< 3.27	< 3.07	< 2.17	< 1.80	< 1.66	< 17.8
699368006	11/20/2024	5890 ± 433										
703369006	12/17/2024	3900 ± 348										

Lab ID	Collect Date	^{3}H	^{54}Mn	^{58}Co	^{59}Fe	^{60}Co	^{65}Zn	^{95}Zr	^{95}Nb	^{134}Cs	^{137}Cs	^{140}Ba-^{140}La
			Monitoring Well 101 (MW-101)									
683592001	8/22/2024	< 277										
			Monitoring Well 101R (MW-101R)									
692851007	10/23/2024	< 222										
			Monitoring Well 102 (MW-102)									
683592002	8/22/2024	< 259										
692851008	10/23/2024	< 230										
			Monitoring Well 103 (MW-103)									
683592003	8/22/2024	< 258										
692851009	10/23/2024	< 235										
			Monitoring Well 104 (MW-104)									
692851010	10/23/2024	< 230										
			Monitoring Well 105 (MW-105)									
692851011	10/23/2024	< 220										
			Storm Drain SD006									
665239001	4/16/2024	< 181										
			Storm Drain SD007									
680291001	8/1/2024	< 287										